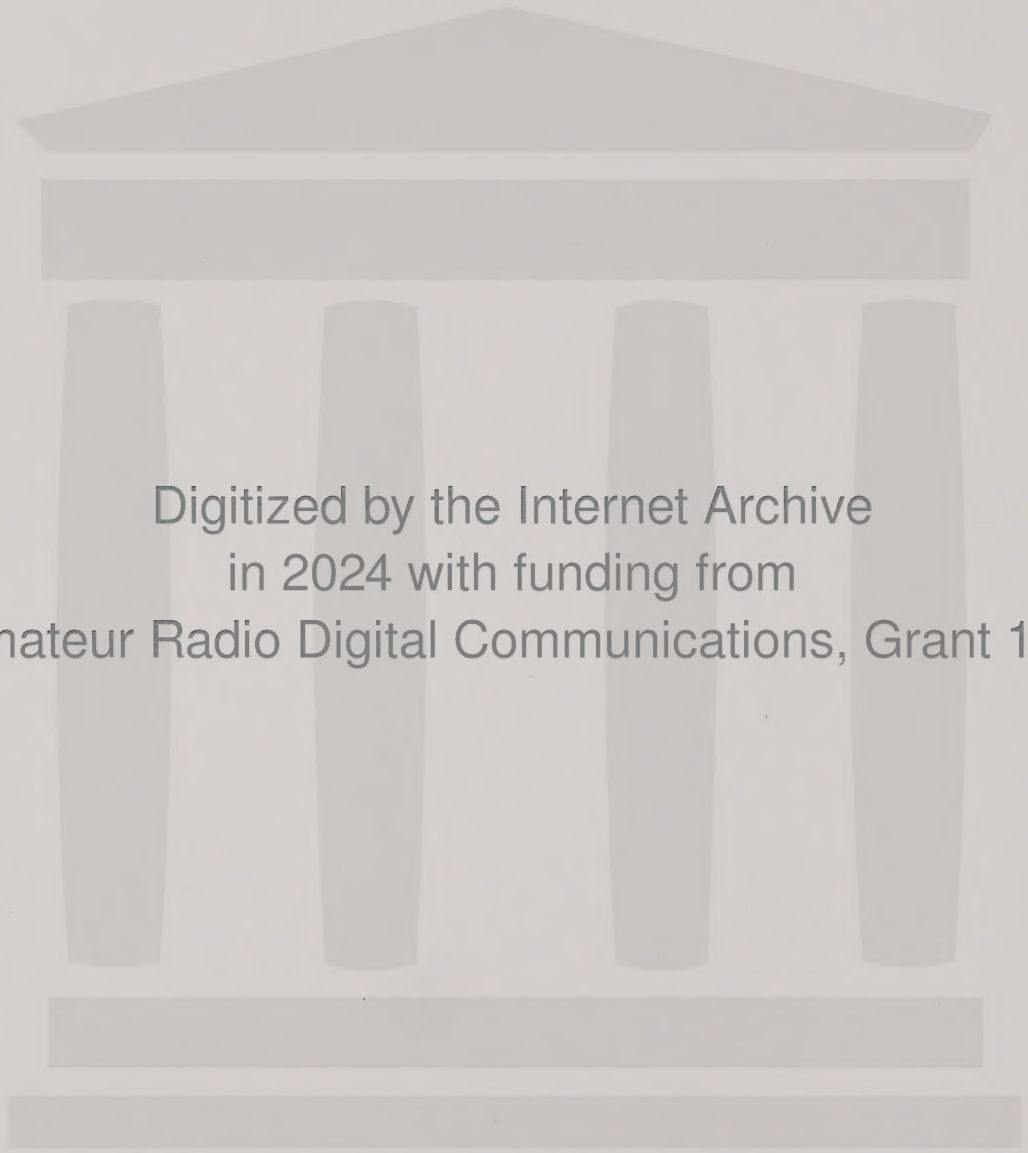
PIB 21

table of radio spectrum usage in new zealand

Ministry of Economic Development
Manatu Ohanga

Radio Spectrum



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Ministry of Economic Development
Manatū Ōhanga
Radio Spectrum

TABLE OF RADIO SPECTRUM USAGE IN NEW ZEALAND

Spectrum Planning Division
Radio Spectrum Management Group
Ministry of Economic Development

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1 INTRODUCTION

New Zealand is a Member Administration of the International Telecommunications Union (ITU). It is a signatory to the final acts of radio conferences held by the ITU and subsequently a signatory to the International Radio Regulations. The International Radio Regulations have the status of a United Nations treaty and are the set of international legal documents within which international spectrum management is performed.

Following the World Radio Conference in 2000 (WRC-2000) the Spectrum Planning Division of the Radio Spectrum Management Group embarked on a project to document the usage of the radio spectrum in New Zealand and to develop a framework to ascertain the impact of the decision of the radio conference on radio spectrum usage in New Zealand. At the same time it was seen as useful to update the existing New Zealand table of allocations such that it could be used as a benchmark from which to predict and measure the impact of any international and national spectrum management decisions.

The New Zealand legal instruments under which national spectrum management is performed are the; Radiocommunications Act 1989, and pursuant to this Act are the Radiocommunications (Radio) Regulations 1993. These legal instruments contain the tools with which the Radio Spectrum Management Group of the Ministry of Economic Development (herein referred to as the Ministry) manages the Radio Spectrum Resource.

Within the Strategic Framework for Radio Spectrum Management in New Zealand are a number of tools for licensing transmissions, they are; Management Rights, Spectrum Licenses, Radio Licenses, General Licenses and licence exemptions. An overview of the administrative Radio Licensing regime can be found in The New Zealand Radio Licensing Regime. Further information pertaining to Management Rights and Spectrum Licenses (including the tendering process) is contained in Public Information Brochure 19 "Radio Spectrum Tenders", Public Information Brochure 28: "Radio Spectrum Auctions, and from the Ministry of Economic Development's Radio Spectrum Auction internet site.

Radio frequency energy can be generated intentionally or unintentionally by electrical devices. Unintentional radiators and intentional radiators that utilise RF energy for purposes other than communications are not licensed within the strategic framework mentioned above. However, such devices may cause interference to the reception of intentional radiation, thus an additional framework is necessary to minimise the possibility of interference, or to ensure the Electromagnetic Compatibility (EMC) of, all electronic (including radiocommunication) products. Details of New Zealand's EMC framework can be found on the Ministry of Economic Development's standards web site, and in the public information brochures PIB18 "Control of Interfering Equipment" and PIB33 "Electromagnetic Compatibility".

A useful technique for managing interference minimised use of the radio spectrum is by frequency division; that is to divide the radio spectrum into arbitrary blocks by frequency. These blocks are then allocated to particular radio services e.g. Broadcasting, Fixed and Mobile services. A tabular form of this division is the essence of a table of frequency allocations.

The table in section 2 indicates significant, but not necessarily exclusive, existing usage within New Zealand of ranges of frequencies (ie "bands") by various radio services. It is based on the International Radio Regulations "Table of Allocations" - particularly where international co-ordination is important such as in the aeronautical, maritime, satellite, navigation, space research, astronomy and amateur services. It should be noted, however, that some spectrum in New Zealand is the subject of privately owned Management Rights.

A less detailed overview of the NZ table of radio allocations is given in the chart of Radio Spectrum Allocations in New Zealand.

This document is intended for use by persons of all levels of expertise from persons with a general interest in radio usage and allocation through to the professional radio engineer. It is expected to be used as a source document for determining operational policies, recommendations and decisions pertaining to future radio usage in New Zealand.

1.1 Consistency of Information and Disclaimer

The table is indicative based on such information, current as of January 2001, held by the Ministry as to the nature of licenses issued by the managers (public and private) of the radio spectrum. It should therefore be noted that this table is subject to change over time. The Ministry does not accept any liability for any loss or damage resulting from the use or misuse of this document.

Radio spectrum usage and band planning is dynamic in nature, hence this document is considered a 'living' document for which the accuracy of the information is maintained periodically. It is recommended that the electronic publication located at **http://www.med.govt.nz/rsm/planning/nztable.html** be used where possible to ensure the consistency and integrity of the information contained herein.

2 THE NEW ZEALAND TABLE OF ALLOCATIONS

2.1 How to use the Table

The New Zealand Table of Allocations has been designed to be used in both electronic and printed formats. However, it contains a substantial number of hypertext links to other publications and the full usefulness of the document is only realisable in the electronic format.

The table is divided into 6 columns, and generally is to be read from left to right. The first two columns are reproduced from Section S5 of the International Radio Regulations. ITU footnotes pertaining only to ITU Region 3, to which New Zealand belongs, are annexed at the end of this document.

1	2	3	4	5	6
Frequency Range	**International Region 3 Allocation**	**New Zealand Allocation**	**Use Lvl**	**Summary of Usage**	**References and Policies**

The first column indicates the frequency range for which entries to the left relate to.

The second column shows the International Radio Regulations Region 3 radio service allocations.

The third column of the table shows the specific New Zealand allocation(s) adopted from the ITU Region 3 allocations.

The fourth column shows the number of licensed transmissions within the frequency range indicated in the first or third column. However, because of the existence of different licensing techniques this may not relate to the number of transmitters in existence. Licensing techniques that are employed by the New Zealand Administration are;

- Management Rights
- Spectrum Licenses
- Apparatus or Radio Licensing
- General Licensing

The fourth column is intended to give an idea of the level of usage of a particular band in New Zealand. In this column the number of General Licenses is indicated as a number followed by the mnemonic GL. In bands managed under the Apparatus or Radio Licensing regime the number of assignments is indicated by a number followed by the mnemonic AS. It is important to note that a Radio Licence may contain multiple assignments. In bands managed under the Management Right regime the number of Spectrum Licences is indicated by a number followed by the mnemonic SL.

The fifth column summarises the service usage in New Zealand and in general gives more specific information related to the allocation.

The sixth column lists any relevant references, documents, General Licences or policies that pertain to use of the associated band, in New Zealand. The Ministry publishes, amongst other documents; specifications pertaining to the minimum performance characteristics of radio equipment (RFS), public information brochures (PIB) pertaining to the use of equipment and/or frequency bands, planning or Engineering Consideration Documents (ECDs) and their associated findings and operational policy documents. References to ECDs are only given where the planning process is currently underway, where the planning process has been concluded references to the final output documents, commonly operation policy documents, are shown.

An index of Radio Frequency Specifications (RFS) published by the Ministry is contained in RFS50.

Table entries highlighted indicate bands managed (either by the Crown or private band manager) under the Management Right Regime.

2.2 Terminology and Nomenclature

The following section is dedicated to explanations of the terminology, nomenclature and abbreviations used in this document.

2.2.1. Frequency Bands

Section S2.1 of the **International Radio Regulations** states that the radio spectrum shall be subdivided into nine frequency bands, which shall be designated by progressive whole numbers in accordance with the following table:

Band number	Symbols	Frequency range (lower limit exclusive, upper limit inclusive)	Band Description
4	VLF	3 to 30 kHz	Very Low Frequency
5	LF	30 to 300 kHz	Low Frequency
6	MF	300 to 3 000 kHz	Medium Frequency
7	HF	3 to 30 MHz	High Frequency
8	VHF	30 to 300 MHz	Very High Frequency
9	UHF	300 to 3 000 MHz	Ultra High Frequency
10	SHF	3 to 30 GHz	Super High Frequency
11	EHF	30 to 300 GHz	Extra High Frequency
12		300 to 3 000 GHz	Infrared

NOTE 1: "Band N" (N = band number) extends from 0.3×10^N Hz to 3×10^N Hz.
NOTE 2: Prefix: k = kilo (10^3), M = mega (10^6), G = giga (10^9).

2.2.2. Abbreviations and Acronyms

The following table gives a list of the abbreviations and/or acronyms and associated meanings used in the NZ table of allocations (section 2.3):

Abbreviation	Meaning
(OR)	Off-route, used in conjunction with Aeronautical Mobile Service
(R)	En-route, used in conjunction with Aeronautical Mobile Service
AMPS	Advanced Mobile Phone System
Cospas-Sarsat	International Satellite System for Search and Rescue
DAMPS	Digital Advance Mobile Phone System
DECT	Digital Enhanced Cordless Telecommunications
DGPS	Differential Global Positioning System used for correcting dithered GPS signals to improve accuracy.
DSC	Distress and Safety Calling
DTH	Direct to Home (reception), used in conjunction with the Fixed Satellite Service
EPIRB	Emergency Position Indicating Radio Beacon
FWA	Fixed Wireless Access
GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System
GPS	Global Positioning System
GSM	Global System for Mobile communications
ILS	Instrument Landing System
IRR	International Radio Regulations
ISM	Industry, Scientific, and Medical
ITU	International Telecommunications Union
LMDS	Local Multipoint Distribution Service
MLS	Microwave Landing System
MR #	Management Right (the # signifies an integer identification number).
NDB(s)	Non-Directional Beacon(s)
NLU	No licensed usage
PCS	Personal Communications System
PHS	Personal Handyphone System
PRS	Personal Radio Service
RADAR	RAdio Detection And Ranging
RLAN	Radio Local Area Network
RRD(s)	Restricted Radiation Device(s), also known as Short Range Device(s) or SRD(s)
SAR	Search and Rescue
SRD(s)	Short Range Device(s), also known as Restricted Radiation Device(s) or RRD(s)
VSAT	Very Small Aperture Terminals
WLL	Wireless Local Loop

2.3 New Zealand Table of Allocation

2.3.1 VLF and LF Bands (3 - 300 kHz)

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
Below 9 kHz	Not allocated S5.53 S5.54	NOT ALLOCATED	-	Research of VLF propagation	
9 - 14 kHz	RADIONAVIGATION	9 - 90 kHz FIXED MARITIME-MOBILE RADIONAVIGATION	NLU	Leaky coaxial wire for underground communications e.g. Mining Submarine communications	
14 - 19.95 kHz	FIXED MARITIME MOBILE				
19.95 - 20.05 kHz	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)				
20.05 - 70 kHz	FIXED MARITIME MOBILE				
70 - 72 kHz	RADIONAVIGATION S5.60 Fixed Maritime mobile S5.57				
72 - 84 kHz	FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.60				
84 - 86 kHz	RADIONAVIGATION S5.60 Fixed Maritime mobile S5.57				
86 - 90 kHz	FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.60				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
90 - 110 kHz	RADIONAVIGATION S5.62 Fixed S5.64	90 – 120 kHz RADIONAVIGATION	NLU		
110 - 112 kHz	FIXED MARITIME MOBILE RADIONAVIGATION S5.60				
112 - 117.6 kHz	RADIONAVIGATION S5.60 Fixed Maritime mobile				
117.6 - 126 kHz	FIXED MARITIME MOBILE RADIONAVIGATION S5.60	120-140 kHz FIXED MARITIME MOBILE RADIONAVIGATION	1	General Licence for RRDs, applications include: • Car locks, alarms and immobilizers • Shop tag identification systems • Telemetry and telecommand systems	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus
126 - 129 kHz	RADIONAVIGATION S5.60 Fixed Maritime mobile S5.64				
129 - 130 kHz	FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64				
130 - 160 kHz	FIXED MARITIME MOBILE RADIONAVIGATION S5.64	140 - 165 kHz FIXED MARITIME MOBILE RADIONAVIGATION	NLU		
160 - 190 kHz	FIXED Aeronautical radionavigation	165 - 190 kHz FIXED Aeronautical Radionavigation Amateur	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
190 - 200 kHz	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	39	Aeronautical NDBs & DGPS	
200-285 kHz	AERONAUTICAL RADIONAVIGATION Aeronautical mobile				
285-325 kHz	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73				

2.3.2 MF Band (300 - 3000 kHz)

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
285-325 kHz	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) S5.73	AERONAUTICAL RADIONAVIGATION		Aeronautical NDBs & DGPS	
325-405 kHz	AERONAUTICAL RADIONAVIGATION Aeronautical mobile				
405-415 kHz	RADIONAVIGATION S5.76 Aeronautical mobile	RADIONAVIGATION	NLU		
415-495 kHz	MARITIME MOBILE S5.79 S5.79A S5.81 S5.82	MARITIME MOBILE	4	Government Maritime Mobile Services	
495-505 kHz	MOBILE (distress and calling) S5.83				
505-526.5 kHz	MARITIME MOBILE S5.79 S5.79A S5.84 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Land mobile S5.81				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
526.5-535 kHz	BROADCASTING Mobile	521 - 1612 kHz BROADCASTING	173	MF-AM Sound Broadcasting under MR regime (MR15)	Radio Spectrum Auctions Broadcasting POLDOCs: Low Value Licences, Temporary pending Tender Licences, Interference Evaluation Licences, Allocation of Limited Term Temporary Licences, Temporary Licences, Increases in Population Coverage, Licence Variations Involving Decreases in Power, Temporary Variations to Licences Involving Population Increases, Definition and Measurement of Licensed Power Under Spectrum Licenses
535-1 606.5 kHz	BROADCASTING				
1 606.5-1 800 kHz	FIXED MOBILE RADIOLOCATION RADIONAVIGATION	1612 - 1690 kHz RADIONAVIGATION	2	Maritime & Aeronautical NDBs	
		1690 - 1800 kHz FIXED MOBILE	4	CT1 Cordless Telephone base transmitters Generally licensed Radio Buoys Government Land & Maritime Mobile Services	General Licence for Cordless Telephones RFS30: Cordless Telephones General Licence for Radio Buoys

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
1 800-2 000 kHz	AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation S5.97	1800 – 1950 kHz AMATEUR FIXED MOBILE except aeronautical mobile	8	Amateur 160m band Generally licensed Radio Buoys Government Maritime Mobile Services DGPS	Guide for visiting Amateur Radio Operators General Licence for Radio Buoys POLDOC Other Services 001: Co-ordination of Frequency Bands where the Amateur Service is Co-primary
		1950-2000 kHz MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation	2	Radio Buoys Land Mobile Government Service NDB	General Licence for Radio Buoys
2 000-2 065 kHz	FIXED MOBILE	FIXED MOBILE	159	Maritime Mobile Land Mobile	
2 065-2 107 kHz	MARITIME MOBILE S5.106	MARITIME MOBILE	20	Maritime Mobile	
2 107-2 170 kHz	FIXED MOBILE	MOBILE	40	Maritime Mobile - coast stations Land Mobile Government Services	
2 170-2 173.5 kHz	MARITIME MOBILE	MOBILE	NLU		
2 173.5-2 190.5 kHz	MOBILE (distress and calling) S5.108 S5.109 S5.110 S5.111	MARITIME MOBILE	150	2182 kHz distress and calling	
2 190.5-2 194 kHz	MARITIME MOBILE	MARITIME MOBILE	NLU		
2 194-2 300 kHz	FIXED MOBILE	FIXED MOBILE	28	Predominantly Mobile with some Fixed usage	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
2 300-2 495 kHz	FIXED MOBILE BROADCASTING S5.113	FIXED MOBILE	155	Land and Maritime Mobile with one Fixed Service Licence	
2 495-2 501 kHz	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY 2.5 MHz	NLU		
2501-2502 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research				
2 502-2 505 kHz	STANDARD FREQUENCY AND TIME SIGNAL				
2 505-2 850 kHz	FIXED MOBILE	MOBILE	45	Land, maritime and aeronautical mobile	
2 850-3 025 kHz	AERONAUTICAL MOBILE (R) S5.111 S5.115	AERONAUTICAL MOBILE (R)	30	Aeronautical Base and SAR (3023 kHz)	

2.3.3 HF Band (3 - 30 MHz)

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
2 850-3 025 kHz	AERONAUTICAL MOBILE (R) S5.111 S5.115	AERONAUTICAL MOBILE (R)	30	Aeronautical Base and SAR (3023 kHz)	
3 025-3 155 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	44	Commercial and Government aeronautical services	
3 155-3 200 kHz	FIXED MOBILE except aeronautical mobile (R) S5.116	MOBILE except aeronautical mobile (R)	15	Land Mobile simplex and Aeronautical Mobile (OR)	
3 200-3 230 kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING S5.113 S5.116	FIXED MOBILE except aeronautical mobile (R)	173	Predominantly Land Mobile with a few Fixed assignments	
3 230-3 400 kHz	FIXED MOBILE except aeronautical mobile BROADCASTING S5.113 S5.116				
3 400-3 500 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	2	Aeronautical base transmitters at Auckland Airport	
3 500-3 900 kHz	AMATEUR S5.120 FIXED MOBILE	AMATEUR MOBILE	1	80m Amateur Band	Guide for visiting Amateur Radio Operators
3 900-3 950 kHz	AERONAUTICAL MOBILE BROADCASTING	AERONAUTICAL MOBILE BROADCASTING	15	Land and Aeronautical Mobile in the lower South Island Broadcasting service for the print disabled located in Levin	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
3 950-4 000 kHz	FIXED BROADCASTING S5.126	FIXED	2	Government Fixed Services	
4 000-4 063 kHz	FIXED MARITIME MOBILE S5.127 S5.126	FIXED MARITIME MOBILE	6	Government Fixed and Maritime Mobile Services GMDSS/DSC training licenses	
4 063-4 438 kHz	MARITIME MOBILE S5.79A S5.109 S5.110 S5.130 S5.131 S5.132 S5.129	MARITIME MOBILE	141	Private and Public Coast Stations	
4 438-4 650 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE	76	Heavily used for Fixed and Mobile use including maritime mobile. Range of 'All New Zealand' Fixed Services. Fixed service to South Pacific and sub-Antarctic islands. Maritime Mobile service to similar areas. Extensive land mobile service to remote locations.	
4 650-4 700 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	2	Flight operations based in Auckland	
4 700-4 750 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	10	Government Services. Aeronautical communications in remote locations. Planned for use at Scott Base.	
4 750-4 850 kHz	FIXED BROADCASTING S5.113 Land mobile	FIXED Land Mobile	2	Predominantly Government Services, lightly used for fixed and mobile use	
4 850-4 995 kHz	FIXED LAND MOBILE BROADCASTING S5.113	LAND MOBILE	60	Land Mobile Simplex Services (a few based at coast stations, one at a remote aeronautical base)	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
4 995-5 003 kHz	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY 5 MHz	NLU		
5 003-5 005 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research				
5 005-5 060 kHz	FIXED BROADCASTING S5.113	FIXED	3	Government Fixed Service	
5 060-5 250 kHz	FIXED Mobile except aeronautical mobile	FIXED Land Mobile	16	Fixed Services to South Pacific and Sub-Antarctic Islands. Minor Land Mobile use.	
5 250-5 450 kHz	FIXED MOBILE except aeronautical mobile	LAND MOBILE	138	Land Mobile and communications to Aeronautical Mobile (OR) (helicopters) operating in conjunction with land mobile services. Extensive Government and Civil Defence use.	
5 450-5 480 kHz	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	AERONAUTICAL MOBILE (OR) LAND MOBILE	35	Land Mobile service operating in conjunction with aeronautical mobile service	
5 480-5 680 kHz	AERONAUTICAL MOBILE (R) S5.111 S5.115	AERONAUTICAL MOBILE (R)	39	Flight Operations based in Auckland, Christchurch, Invercargill, Queenstown and Milford	
5 680-5 730 kHz	AERONAUTICAL MOBILE (OR) S5.111 S5.115	AERONAUTICAL MOBILE (OR)	43	Off-route communications especially remote areas, with common SAR frequency of 5681.4 kHz.	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
5 730-5 900 kHz	FIXED Mobile except aeronautical mobile (R)	Mobile except aeronautical mobile (R)	3	Mainly Government Mobile services with limited land mobile and meteorological broadcasting from Auckland	
5 900-5 950 kHz	BROADCASTING S5.134 S5.136	FIXED	1	Government Fixed services	
5 950-6 200 kHz	BROADCASTING	BROADCASTING	3	Radio for the print disabled 5960 kHz Radio NZ international 6100 kHz	
6 200-6 525 kHz	MARITIME MOBILE S5.109 S5.110 S5.130 S5.132 S5.137	MARITIME MOBILE	72	Extensive Maritime mobile usage for ship and coast stations	
6 525-6 685 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	4	Flight operations based in Auckland	
6 685-6 765 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	3	Government aeronautical operations with portable stations on 6745.5 kHz	
6765-7000 kHz	FIXED Land mobile S5.138	FIXED Mobile	10	6765-6795 kHz ISM and RRD usage	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
				6795-7000 kHz Government fixed usage with SAR operations on 6911.4 kHz. One maritime mobile use.	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
7 000-7 100 kHz	AMATEUR S5.120 AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	1	Amateur 40m Band	Guide for visiting Amateur Radio Operators
7 100-7 300 kHz	BROADCASTING	BROADCASTING Amateur	4	Radio for the Print Disabled and amateur	Guide for visiting Amateur Radio Operators
7 300-7 350 kHz	BROADCASTING S5.134 S5.143	FIXED	1	Government Fixed Services	
7 350-8 100 kHz	FIXED Land mobile S5.144	FIXED Land Mobile	35	Fixed and mobile service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services including Civil Defence.	
8 100-8 195 kHz	FIXED MARITIME MOBILE	FIXED MARITIME MOBILE	NLU		
8 195-8 815 kHz	MARITIME MOBILE S5.109 S5.110 S5.132 S5.145 S5.111	MARITIME MOBILE	51	Extensive use for Ship - Shore communications	
8 815-8 965 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	4	Flight operations based in Auckland	
8 965-9 040 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	7	Mainly Government services and Flight operations	
9 040-9 400 kHz	FIXED	FIXED	4	Fixed and mobile service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services including Civil Defence.	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
9 400-9 500 kHz	BROADCASTING S5.134 S5.146	BROADCASTING FIXED	3	31m Band Radio New Zealand International on 9655 kHz and 9700 kHz Limited Government Fixed services	
9 500-9 900 kHz	BROADCASTING S5.147				
9 900-9 995 kHz	FIXED	FIXED	8	Fixed service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services including Department of Conservation.	
9 995-10 003 kHz	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) S5.111	STANDARD FREQUENCY 10 MHz	NLU		
10 003-10 005 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space research S5.111				
10.005-10.100 MHz	AERONAUTICAL MOBILE (R) S5.111	AERONAUTICAL MOBILE (R)	3	Flight Operations in Auckland	
10.100-10.150 MHz	FIXED Amateur S5.120	Amateur	1	Amateur 30m Band	Guide for visiting Amateur Radio Operators
10.150-11.175 MHz	FIXED Mobile except aeronautical mobile (R)	FIXED	2	Fixed service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services.	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
11.175-11.275 MHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	4	Mainly Government services, with some rural and helicopter off-route usage.	
11.275-11.400 MHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	1	Flight operations based in Auckland	
11.400-11.600 MHz	FIXED	FIXED	4	Government Fixed services for international coverage.	
11.600-11.650 MHz	BROADCASTING S5.134 S5.146	FIXED	2	Fixed service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services	
11.650-12.050 MHz	BROADCASTING S5.147	BROADCASTING	3	25m Band Radio New Zealand International on 11.73 MHz and 11.90 MHz	
12.050-12.100 MHz	BROADCASTING S5.134 S5.146	FIXED	2	Fixed service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services	
12.100-12.230 MHz	FIXED	FIXED	3	Fixed service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services	
12.230-13.200 MHz	MARITIME MOBILE S5.109 S5.110 S5.132 S5.145	MARITIME MOBILE	37	Maritime mobile ship to shore communications	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
13.200-13.260 MHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	4	Off route flight operations in Auckland and Taupo including communications to rescue helicopters	
13.260-13.360 MHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	3	Flight operations in Auckland	
13.360-13.410 MHz	FIXED RADIO ASTRONOMY S5.149	FIXED	2	Fixed service for both national and international coverage within the South Pacific and sub-Antarctic Islands. Mainly Government services including the Meteorological and Department of Conservation communications.	
13.410-13.570 MHz	FIXED Mobile except aeronautical mobile (R) S5.150	FIXED Mobile	6		
			1	13.550-13.570 MHz ISM & RRD use	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
13.570-13.600 MHz	BROADCASTING S5.134 S5.151	FIXED	2	Meteorological communications to Raoul Island	
13.600-13.800 MHz	BROADCASTING				
13.800-13.870 MHz	BROADCASTING S5.134 S5.151				
13.870-14.000 MHz	FIXED Mobile except aeronautical mobile (R)	FIXED	3	International Government Fixed service communications to Antarctic bases.	
14.000-14.250 MHz	AMATEUR S5.120 AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	1	Amateur 20m Band	Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
14.250-14.350 MHz	AMATEUR S5.120	AMATEUR	1	Amateur 20m Band (Continued)	Guide for visiting Amateur Radio Operators (Continued)
14.350-14.990 MHz	FIXED Mobile except aeronautical mobile (R)	FIXED	5	Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands. Mainly Government services including the Meteorological communications.	
14.990-15.005 MHz	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) S5.111	STANDARD FREQUENCY 15 MHz	NLU		
15.005-15.010 MHz	STANDARD FREQUENCY AND TIME SIGNAL Space research				
15.010-15.100 MHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	3	Off route flight operations in Auckland and Taupo. Government off-route aeronautical use.	
15.100-15.600 MHz	BROADCASTING	BROADCASTING	1	Radio New Zealand International on 15.115 MHz	
15.600-15.800 MHz	BROADCASTING S5.134 S5.146	FIXED	3	Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands. Mainly Government services including Meteorological communications.	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
15.800-16.360 MHz	FIXED	FIXED	4	Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands. Mainly Government services including Department of Conservation and Meteorological communications.	
16.360-17.410 MHz	MARITIME MOBILE S5.109 S5.110 S5.132 S5.145	MARITIME MOBILE	29	Extensive private and public coast station usage throughout New Zealand.	
17.410-17.480 MHz	FIXED	FIXED	1	Government Fixed service international coverage to pacific Islands.	
17.480-17.550 MHz	BROADCASTING S5.134 S5.146	FIXED	1	Government Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands.	
17.550-17.900 MHz	BROADCASTING	BROADCASTING Fixed	1	Government Fixed service assignments for trans-Tasman Sea communications	
17.900-17.970 MHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	5	Flight operations in Auckland and Taupo	
17.970-18.030 MHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	3	Off route flight operation communications to the South Pacific and around Auckland and Taupo	
18.030-18.052 MHz	FIXED	FIXED	1	Government Fixed service assignments for trans-Tasman Sea communications	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
18.052-18.068 MHz	FIXED Space research	FIXED	NLU		
18.068-18.168 MHz	AMATEUR S5.120 AMATEUR-SATELLITE	AMATEUR	1	Amateur 17m Band	Guide for visiting Amateur Radio Operators
18.168-18.780 MHz	FIXED Mobile except aeronautical mobile	FIXED	2	Government Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands. One commercial circuit to Pitcairn Island	
18.780-18.900 MHz	MARITIME MOBILE	MARITIME MOBILE	1	Maritime simplex radiotelephone to ships in the South Pacific.	
18.900-19.020 MHz	BROADCASTING S5.134 S5.146	BROADCASTING	NLU		
19.020-19.680 MHz	FIXED	FIXED	1	Government Fixed service assignments for trans-Tasman Sea and South Pacific communications	
19.680-19.800 MHz	MARITIME MOBILE S5.132	MARITIME MOBILE	1	Maritime duplex radiotelephone to ships in the South Pacific.	
19.800-19.990 MHz	FIXED	FIXED	1	Government Fixed service assignments for national communications	
19.990-19.995 MHz	STANDARD FREQUENCY AND TIME SIGNAL Space research S5.111	STANDARD FREQUENCY 20 MHz	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
19.995-20.010 MHz	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) S5.111	STANDARD FREQUENCY 20 MHz (Continued)	NLU		
20.010-21.000 MHz	FIXED Mobile	FIXED	2	Government Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands. One commercial circuit to Scott Base (Antarctica).	
21.000-21.450 MHz	AMATEUR S5.120 AMATEUR-SATELLITE	AMATEUR	1	Amateur 15m Band	Guide for visiting Amateur Radio Operators
21.450-21.850 MHz	BROADCASTING	BROADCASTING Fixed	1	Government Fixed service for International Coverage	
21.850-21.870 MHz	FIXED	FIXED	1	Government Fixed service assignments for national communications	
21.870-21.924 MHz	FIXED S5.155B	FIXED	1	Government Fixed service for International Coverage	
21.924-22.000 MHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	2	Flight operations in Auckland	
22.000-22.855 MHz	MARITIME MOBILE S5.132	MARITIME MOBILE	13	Ship and shore communications	
22.855-23.000 MHz	FIXED	FIXED	2	Government Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands. One commercial circuit to Scott Pitcairn Island.	
23.000-23.200 MHz	FIXED Mobile except aeronautical mobile (R)				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
23.200-23.350 MHz	FIXED S5.156A AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	1	Government Aeronautical (OR) services for national communications, and international communications within the South Pacific.	
23.350-24.000 MHz	FIXED MOBILE except aeronautical mobile S5.157	FIXED	2	Government Fixed service for both national and international coverage within the Pacific and sub-Antarctic Islands. One commercial circuit to Scott Pitcairn Island.	
24.000-24.890 MHz	FIXED LAND MOBILE				
24.890-24.990 MHz	AMATEUR S5.120 AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	1	Amateur 12m band	Guide for visiting Amateur Radio Operators
24.990-25.005 MHz	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY 25 MHz	NLU		
25.005-25.010 MHz	STANDARD FREQUENCY AND TIME SIGNAL Space research				
25.010-25.070 MHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE	1	Government Fixed service for national coverage	
25.070-25.210 MHz	MARITIME MOBILE	MARITIME MOBILE	1	Government Maritime Service for national communications and international communications within the South Pacific	
25.210-25.550 MHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE	1	Government services for national communications.	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
25.550-25.670 MHz	RADIO ASTRONOMY S5.149	FIXED	1	Government Fixed services for national communications	
25 670-26 100 MHz	BROADCASTING	BROADCASTING	NLU	11m Band	
26.100-26.175 MHz	MARITIME MOBILE S5.132	MARITIME MOBILE	NLU		
26.175-27.500 MHz	FIXED MOBILE except aeronautical mobile S5.150	FIXED MOBILE except aeronautical mobile	2	26.175 - 26.3 MHz Meteorological (auroral radar) at Birdlings Flat and Government Fixed Services for national communications	
			1	26.38 - 26.78 MHz Citizen "CB" radio Service	General Licence for Citizen Radio Apparatus RFS23: Citizen Radio Service
			1	26.78 - 26.95 MHz Government Fixed service for national coverage	
			96	26.95 - 27.3 MHz Local area paging services ISM usage RRD usage 27.12 MHz Amateur	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS28: Radio Paging RFS27: Telecommand and Telemetry Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
26.175-27.500 MHz (Continued)	FIXED MOBILE except aeronautical mobile S5.150 (Continued)	FIXED MOBILE except aeronautical mobile (Continued)	1	27.3 - 27.5 MHz Government Fixed services for national and international communications	
27.500-28.000 MHz	METEOROLOGICAL AIDS FIXED MOBILE	FIXED MOBILE		Government Fixed and Mobile services to for national and international communications within the South Pacific Wavebouy Telemetry at Mokohinau	
28.000-29.700 MHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	1	Amateur 10m Band	Guide for visiting Amateur Radio Operators
29.700-30.005 MHz	FIXED MOBILE	FIXED MOBILE		29.7 - 29.775 RRD usage 29.775 - 29.785 Government 29.785 - 29.890 RRD usage 29.890 - 29.910 Paging for fire service 29.910 - 30.00 RRD and telemetry device usage	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry

2.3.4 VHF Band (30 - 300 MHz)

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
29.700-30.005 MHz	FIXED MOBILE	FIXED MOBILE		29.7 - 29.775 RRD usage 29.775 - 29.785 Government 29.785 - 29.890 RRD usage 29.890 - 29.910 Paging for fire service 29.910 - 30.00 RRD and telemetry device usage	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
30.005-30.01 MHz	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	UNALLOCATED	NLU		
30.01-37.5 MHz	FIXED MOBILE	FIXED MOBILE		30.4 - 37.5 MHz Government services for national and international communications within the South Pacific and sub-Antarctic islands 30.05 - 30.8 MHz Cordless Telephone"CT1 Band" base transmit 30.8 - 32 MHz RRD usage 31.3 - 31.6 Radio Paging usage 33.40 MHz TV Sound IF 35 - 37.2 MHz RRD and telemetry device usage	General Licence for RRDs General Licence for CT1 and CT2 cordless telephones RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry RFS30: Cordless Telephones RFS28: Radio Paging POLDOC General Licence 001: High Power Cordless Telephones

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
37.5-38.25 MHz	FIXED MOBILE Radio astronomy S5.149	FIXED MOBILE		38 - 39.986 MHz Government services for national and international communications within the South Pacific and sub-Antarctic islands 38.90 MHz TV Sound IF 39.2 MHz Telemetry device usage 39 - 39.7 MHz RRD usage 39.7 - 40.5 MHz Cordless Telephone "CT1 Band" Mobile Transmit	General Licence for RRDs General Licence for CT1 and CT2 cordless telephones RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry RFS30: Cordless Telephones POLDOC General Licence 001: High Power Cordless Telephones
38.25-39.986 MHz	FIXED MOBILE				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
39.986-40.02 MHz	FIXED MOBILE Space research	FIXED MOBILE		39.7 - 40.5 MHz Cordless Telephone "CT1 Band" Mobile Transmit 40.02 - 40.98 Government services for national and international communications 40.68 Radio Paging 40.5 - 41 MHz ISM and RRD usage, in particular aero-model control 40.66 - 40.7 ISM usage 40.98 - 44 MHz Government services for national and international communications Auroral Radar at Birdlings Flat	General Licence for RRDs General Licence for CT1 and CT2 cordless telephones RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry RFS30: Cordless Telephones RFS28: Radio Paging POLDOC General Licence 001: High Power Cordless Telephones
40.020-40.980 MHz	FIXED MOBILE S5.150				
40.980-41.015 MHz	FIXED MOBILE Space research				
41.015-44 MHz	FIXED MOBILE				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
44-47 MHz	FIXED MOBILE S5.162	FIXED MOBILE BROADCASTING	33	VHF television broadcasting under MR regime (MR47)	Radio Spectrum Auctions Broadcasting POLDOCs: Low Value Licences, VHF TV Licences, Temporary pending Tender Licences, Interference Evaluation Licences, Allocation of Limited Term Temporary Licences, Temporary Licences, Booster Systems for Remote Area TV, Increases in Population Coverage, Licence Variations Involving Decreases in Power, Temporary Variations to Licences Involving Population Increases, Definition and Measurement of Licensed Power Under Spectrum Licenses
47-50 MHz	FIXED MOBILE BROADCASTING				
50-54 MHz	AMATEUR S5.166 S5.170	50 - 51 MHz FIXED MOBILE BROADCASTING AMATEUR			
		51 - 54 MHz FIXED MOBILE AMATEUR			Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
54-68 MHz	FIXED MOBILE BROADCASTING	BROADCASTING FIXED MOBILE		VHF television broadcasting under MR regime (MR48)	Radio Spectrum Auctions Broadcasting POLDOCs: Low Value Licences, VHF TV Licences, Temporary pending Tender Licences, Interference Evaluation Licences, Allocation of Limited Term Temporary Licences, Temporary Licences, Booster Systems for Remote Area TV, Increases in Population Coverage, Licence Variations Involving Decreases in Power, Temporary Variations to Licences Involving Population Increases, Definition and Measurement of Licensed Power Under Spectrum Licenses
68-74.8 MHz	FIXED MOBILE S5.149	FIXED MOBILE		68 - 72 MHz Fixed "AB" Band	
				72 - 73 MHz RRDs and CT1 Cordless Telephones	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus General Licence for CT1 and CT2 cordless telephones RFS30: Cordless Telephones POLDOC General Licence 001: High Power Cordless Telephones
				73 - 74.8 MHz Fixed "AB" Band	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
74.8-75.2 MHz	AERONAUTICAL RADIONAVIGATION S5.180	AERONAUTICAL RADIONAVIGATION		Aeronautical Marker Beacons ILS Locator Beacons	
75.2-75.4 MHz	FIXED MOBILE	MOBILE		75.2 - 75.4 MHz Land Mobile "ESA" Band (Emergency Services Base Transmit)	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
75.4-87 MHz	FIXED MOBILE S5.149	75.4 - 78.1 MHz NOT ALLOCATED	NLU		
		MOBILE		78.1 - 79.2 MHz Land Mobile "ESA" Band (Emergency Services) Mobile Transmit	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
		79.2 - 81 MHz NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
75.4-87 MHz (Continued)	FIXED MOBILE S5.149 (Continued)	MOBILE		81 - 88 MHz Land Mobile "A" Band 81 - 84.025 Base Transmit 84.0325 - 84.97625 Simplex 84.975-88 Mobile Transmit Including some government services	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 001: Land Mobile Radio Channel Assignment A Band POLDOC Land Mobile 003: Licensing of Land Mobile Services
87-100 MHz	FIXED MOBILE BROADCASTING				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
87-100 MHz (Continued)	FIXED MOBILE BROADCASTING (Continued)	BROADCASTING		88 - 88.5 MHz Guardband historically used for Low Power Sound Broadcasting and radiotelephony under General Licence Future use under determination, possible extension to FM sound broadcasting band	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus
			515	89 - 100 MHz VHF-FM Sound Broadcasting (band II) Under MR regime	Radio Spectrum Auctions Reference Standard: FM Radio Broadcasting Broadcasting POLDOCs: Low Value Licences, VHF TV Licences, Temporary pending Tender Licences, Interference Evaluation Licences, Allocation of Limited Term Temporary Licences, Temporary Licences, Booster Systems for Remote Area TV, Increases in Population Coverage, Licence Variations Involving Decreases in Power, Temporary Variations to Licences Involving Population Increases, Definition and Measurement of Licensed Power Under Spectrum Licenses

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
100-108 MHz	BROADCASTING	BROADCASTING		100 - 101 MHz Radio Public Address Systems 100 - 108 MHz Future use under determination, possible extension to FM sound broadcasting band	PIB16: Radio Public Address Systems POLDOC Land Mobile 001: Land Mobile Radio Channel Assignment B Band
108-117.975 MHz	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		108 - 112 MHz ILS Localisers at major airports	
				112 - 117.975 MHz VOR Beacons at major airports	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
117.975-137 MHz	AERONAUTICAL MOBILE (R) S5.111 S5.198 S5.199 S5.200 S5.203	AERONAUTICAL MOBILE (R)		117.975 - 137 MHz widespread aeronautical use 121.5 MHz Search and Rescue service: Cospas-Sarsat EPIRB transmission 123.1 MHz Low power search and rescue transceivers 132 - 132.6 MHz aeronautical repeaters base transmit 135.4 - 136 MHz aeronautical repeaters base receive 136 - 137 MHz Government aeronautical use	General Licence for 121.5 and 243 MHz EPIRBs General Licence for Search and Rescue Transceivers PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
137-137.025 MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) S5.208	137-138 MOBILE-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile	NLU	Government service usage	
137.025-137.175 MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) S5.208A S5.209 Mobile except aeronautical mobile (R) S5.208				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
137.175-137.825 MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) S5.208				
137.825-138 MHz	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) S5.208A S5.209 Mobile except aeronautical mobile (R) S5.208				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
138-143.6 MHz	FIXED MOBILE Space research (space-to-Earth)	MOBILE		138-144 MHz Land mobile "ESB Band" heavily utilised for emergency services predominantly NZ ambulance and civil defence groups 138.0125-140.5 MHz Mobile Transmit 140.5125-141 MHz Simplex 141.0125-143.5 MHz Base Transmit 143.512-143.9875 MHz Simplex	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
143.6-143.65 MHz	FIXED MOBILE SPACE RESEARCH(space-to-Earth)				
143.65-144 MHz	FIXED MOBILE Space research (space-to-Earth)	MOBILE (Continued)			
144-146 MHz	AMATEUR S5.120 AMATEUR-SATELLITE	AMATEUR		144-148 MHz Amateur 2m Band widespread use of both simplex and repeater services Limited Government service usage	Guide for visiting Amateur Radio Operators
146-148 MHz	AMATEUR FIXED MOBILE				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
148.000-149.900 MHz	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.209 S5.218 S5.219	MOBILE MOBILE-SATELLITE (Earth-to-space)		Civil Defence and Emergency service use throughout New Zealand, migrating to other bands by 2004	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
149.900-150.050 MHz	MOBILE-SATELLITE (Earth-to-space) S5.209 S5.224A RADIONAVIGATION-SATELLITE S5.224B S5.220 S5.222 S5.223	RADIONAVIGATION-SATELLITE MOBILE-SATELLITE (Earth-to-space)		Some mobile use being phased out or migrating to other bands.	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
150.050-156.7625 MHz	FIXED MOBILE S5.226 S5.227	MOBILE		150.050-156 Land Mobile "E" Band extensive nationwide use	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
150.050-156.7625 MHz (Continued)	FIXED MOBILE S5.226 S5.227 (Continued)	MARITIME MOBILE		156-157.6 MHz Maritime Mobile VHF Band	General Licence for Voluntarily Equipped (VHF) Ships Public Information Brochure Maritime VHF Radio Changing for the Better RFS33: VHF Maritime Mobile Service POLDOC Maritime 001: Use of Type Approved Land Mobile Equipment in the VHF Maritime Band POLDOC Maritime 002: VHF Maritime Coastguard Channels
156.7625-156.8375 MHz	MARITIME MOBILE (distress and calling) S5.111 S5.226	MARITIME MOBILE (distress and calling)			
156.8375-174 MHz	FIXED MOBILE S5.226				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
156.8375-174 MHz (Continued)	FIXED MOBILE S5.226 (Continued)	MOBILE		157.6 - 157.8 MHz Mobile Radio Reporting 157.6-158.07 MHz Wide-Area Paging Band 158.07-160.1 MHz Land Mobile "MS" special services band 158.0750-158.575 MHz Mobile Transmit 158.6-160.0875 MHz Simplex services including bush winch operations 160.1-160.6 MHz RRDs 160.1 - 160.3 MHz Telemetry and Telecommand 160.3 - 160.6 MHz Radio Paging 160.6-160.970 MHz Maritime Mobile VHF band 160.970-161.490 MHz Land Mobile "MS" special services band 161.490-162.2 MHz Maritime Mobile VHF band	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus General Licence for Voluntarily Equipped (VHF) Ships RFS33: VHF Maritime Mobile Service Public Information Brochure Maritime VHF Radio Changing for the Better PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz RFS27: Telecommand and Telemetry RFS28: Radio Paging POLDOC Land Mobile 003: Licensing of Land Mobile Services POLDOC Maritime 001: Use of Type Approved Land Mobile Equipment in the VHF Maritime Band POLDOC Maritime 002: VHF Maritime Coastguard Channels

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
156.8375-174 MHz (Continued)	FIXED MOBILE S5.226 (Continued)	FIXED MOBILE		162.2-162.45 MHz Fixed "EE" band 162.45 - 165.45 MHz Land Mobile "EE" band 165.45 - 165.7 MHz Fixed "EE band 166.4-166.8 MHz Wide- Area Paging “WP” Band 166.8 0 - 167.075 MHz Fixed "EE" band 167.075 - 170.05 MHz Land Mobile "EE" band 170.05 - 170.3 MHz Fixed "EE" band 170.3125 - 172.9875 MHz Mobile simplex special services including bush winch operations 173 - 174 MHz RRDs with some fixed and land mobile simplex use	PIB22: Fixed Service Bands in New Zealand PIB23: VHF and UHF Mobile Service bands in New Zealand RFS21: VHF Land Mobile Service (12.5 kHz channelling) RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus POLDOC Land Mobile 003: Licensing of Land Mobile Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
174-223 MHz	FIXED MOBILE BROADCASTING	BROADCASTING		VHF Television (Band III) Under MR regime	Radio Spectrum Auctions Broadcasting POLDOCs: Low Value Licences, VHF TV Licences, Temporary pending Tender Licences, Interference Evaluation Licences, Allocation of Limited Term Temporary Licences, Temporary Licences, Booster Systems for Remote Area TV, Increases in Population Coverage, Licence Variations Involving Decreases in Power, Temporary Variations to Licences Involving Population Increases, Definition and Measurement of Licensed Power Under Spectrum Licenses
223-230 MHz	FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation				
230-235 MHz	FIXED MOBILE AERONAUTICAL RADIONAVIGATION	FIXED MOBILE AERONAUTICAL RADIONAVIGATION		230-300 MHz Extensive Government Service usage. 243 MHz Search and Rescue Service	General Licence for 121.5 and 243 MHz EPIRBs

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
235-267 MHz	FIXED MOBILE S5.111 S5.199 S5.254 S5.256	FIXED MOBILE		230-300 MHz Extensive Government Service usage. 243 MHz Search and Rescue Service (Continued)	General Licence for 121.5 and 243 MHz EPIRBs (Continued)
267-272 MHz	FIXED MOBILE Space operation (space-to-Earth) S5.254 S5.257	FIXED MOBILE			
272-273 MHz	SPACE OPERATION (space-to-Earth) FIXED MOBILE S5.254	FIXED MOBILE			
273-312 MHz	FIXED MOBILE S5.254	FIXED MOBILE		273 - 300 MHz Extensive Government Service usage	

2.3.5 UHF Band (300 - 3000 MHz)

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
273-312 MHz	FIXED MOBILE S5.254	FIXED MOBILE		273 - 300 MHz Extensive Government Service usage	
				300-305 MHz RRDs	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus
				305-328.6 MHz Extensive Government Service usage	
312-315 MHz	FIXED MOBILE Mobile-satellite (Earth-to-space) S5.254 S5.255				
315-322 MHz	FIXED MOBILE S5.254				
322-328.6 MHz	FIXED MOBILE RADIO ASTRONOMY S5.149				
328.6-335.4 MHz	AERONAUTICAL RADIONAVIGATION S5.258	AERONAUTICAL RADIONAVIGATION		Aeronautical ILS beacons at major airports	
335.4-387 MHz	FIXED MOBILE S5.254	FIXED MOBILE		335.4-399.9 MHz Extensive Government usage	
387-390 MHz	FIXED MOBILE Mobile-satellite (space-to-Earth) S5.208A S5.254 S5.255				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
390-399.9 MHz	FIXED MOBILE S5.254	FIXED MOBILE (Continued)		335.4-399.9 MHz Extensive Government usage (Continued)	
399.9-400.05 MHz	MOBILE-SATELLITE (Earth-to-space) S5.209 S5.224A RADIONAVIGATION-SATELLITE S5.222 S5.224B S5.260 S5.220	RADIONAVIGATION SATELLITE	NLU		
400.05-400.15 MHz	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) S5.261 S5.262	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE	NLU		
400.15-401 MHz	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) S5.263 Space operation (space-to-Earth) S5.262 S5.264	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth)	2	Meteorological radio-sondes at Invercargill and Paraparaumu airports	
401-402 MHz	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Land Mobile	24	Meteorological aids nationwide Land Mobile usage is restricted to Medical Telemetry	POLDOC Spectrum Band Plan 003: 400 - 450 MHz Band Plan

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
402-403 MHz	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Land Mobile (Continued)		Meteorological aids nationwide Land Mobile usage is restricted to Medical Telemetry (Continued)	POLDOC Spectrum Band Plan 003: 400 - 450 MHz Band Plan (Continued)
403-406 MHz	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS Fixed Mobile	34	Meteorological aids nationwide Land Mobile usage is restricted to Medical Telemetry Some Government Fixed and Mobile service usage	POLDOC Spectrum Band Plan 003: 400 - 450 MHz Band Plan
406-406.1 MHz	MOBILE-SATELLITE (Earth-to-space) S5.266 S5.267	MOBILE-SATELLITE (Earth-to-space)		Limited to the operation of EPIRBs	POLDOC Spectrum Band Plan 003: 400 - 450 MHz Band Plan General Licence for 406 MHz EPIRBs
406.1-410 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149	MOBILE except aeronautical mobile		Land Mobile Trunked dispatch "TD" Band Mobile Transmit - undergoing migration to digital format.	POLDOC Spectrum Band Plan 003: 400 - 450 MHz Band Plan RFS32: UHF Trunked Dispatch Service RFS37: Studio to Transmitter Linking System POLDOC Fixed 001: Studio to Transmitter Links (STL's)
410-420 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) S5.268	410 - 412 MHz MOBILE		Fixed "IB" Band with some mobile services, being migrated to mobile service only	
		412 - 414 MHz FIXED MOBILE		Being migrated to digital mobile base Transmit for emergency services existing usage is Fixed "IA" Band	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
410-420 MHz (Continued)	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) S5.268 (Continued)	414 - 418 MHz MOBILE		Analogue mobile base Transmit 'TD' band being migrated to digital modulation between 2005 and 2010	
		418 - 420 MHz FIXED MOBILE		Fixed "IB" band with some mobile services, being migrated to mobile service only	
420-430 MHz	FIXED MOBILE except aeronautical mobile Radiolocation	420 - 422 MHz FIXED		Fixed "IC" Band alpha Transmit	
		422 - 424 MHz FIXED MOBILE except aeronautical mobile		Being migrated to digital mobile base Receive for emergency services existing usage is fixed "IC" band beta Transmit	
				424 - 430 MHz Fixed "I" band	
430-440 MHz	RADIOLOCATION Amateur S5.282	RADIOLOCATION Amateur Amateur Satellite		Amateur 70m Band used throughout New Zealand 433.7 - 434.1 MHz RRDs for telemetry/telecommand restricted to short-duration, remote control devices 435 - 438 MHz Amateur Satellite	POLDOC Spectrum Band Plan 003: 400 - 450 MHz Band Plan General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
440-450 MHz	FIXED MOBILE except aeronautical mobile Radiolocation S5.286	FIXED MOBILE except aeronautical mobile Radiolocation		440 - 449 MHz Fixed "JL" band, providing migration spectrum for I band links, STLs accommodated in 444 - 445 MHz	POLDOC Spectrum Band Plan 003: 400 - 450 MHz Band Plan RFS37: Studio to Transmitter Linking System POLDOC Fixed 001: Studio to Transmitter Links (STL's)
				449.750 - 450 MHz Land Mobile "C" band simplex	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
450-455 MHz	FIXED MOBILE S5.209 S5.286 S5.286A	FIXED		450 - 450.275 MHz Fixed "JC" Band (11 x 25 kHz single frequency channels)	PIB22: Fixed Service Bands in New Zealand

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
450-455 MHz (Continued)	FIXED MOBILE S5.209 S5.286 S5.286A (Continued)	MOBILE		450.28125 - 453.29375: MHz land mobile "C" band, mobile Transmit 453.30625 - 453.31875: MHz land mobile "C" band base Transmit	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
		FIXED		453.375 - 454.975 MHz Fixed "JB" band alpha Transmit (53 x 25 kHz two frequency channels interleaved with 108 x 12.5 kHz two frequency channels).	PIB22: Fixed Service Bands in New Zealand
455-456 MHz	FIXED MOBILE S5.209 S5.286A	MOBILE		454.98125 - 455.30625: MHz Land Mobile "C" Band Simplex 455.31875 - 458.33125: MHz Land Mobile "C" Band base Transmit	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
456-459 MHz	FIXED MOBILE S5.287				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
456-459 MHz (Continued)	FIXED MOBILE S5.287 (Continued)	MOBILE (Continued)		458.335 - 458.540 MHz Land Mobile "D" Band Simplex	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
		MOBILE		458.540-458.610 MHz Radio Paging, and RRD usage	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS28: Radio Paging

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
456-459 MHz (Continued)	FIXED MOBILE S5.287 (Continued)			458.610-458.665 MHz Land Mobile "D" Band Simplex	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
459-460 MHz	FIXED MOBILE S5.209 S5.286A	FIXED		458.6625 - 460.0125 MHz Fixed "JB" Band Beta Transmit (53 x 25 kHz two frequency channels interleaved with 108 x 12.5 kHz two frequency channels). 460.025 - 461.425 MHz Fixed "JD" Band Alpha Transmit (28 x 50 kHz Channels) 461.425 - 461.475 MHz Fixed "JE" Band single frequency (2 x 50 kHz)	PIB22: Fixed Service Bands in New Zealand
460-470 MHz	FIXED MOBILE Meteorological-Satellite (space-to-Earth) S5.287 S5.289				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
460-470 MHz (Continued)	FIXED MOBILE Meteorological-Satellite (space-to-Earth) S5.287 S5.289 (Continued)	MOBILE		461.48125-461.80625: MHz Land Mobile "D" Band Simplex 461.81875-464.80625: MHz Land Mobile "D" Band Base Transmit 464.81875-464.18125: MHz Land Mobile "D" Band Simplex	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
		FIXED		465.190-466.675 MHz Fixed "JF" Band (2 x 50 kHz single frequency channels) 465.2375 - 466.6375 MHz Fixed "JD" Band Beta Transmit (28 x 50 kHz channels)	PIB22: Fixed Service Bands in New Zealand

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
460-470 MHz (Continued)	FIXED MOBILE Meteorological-Satellite (space-to-Earth) S5.287 S5.289 (Continued)	MOBILE		466.675 - 466.8 MHz Land Mobile "D" Band Simplex	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
				466.8-466.850 MHz RRDs and Telemetry and Telecommand	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
460-470 MHz (Continued)	FIXED MOBILE Meteorological-Satellite (space-to-Earth) S5.287 S5.289 (Continued)			466.85625-466.99375 MHz Land Mobile "D" Band Simplex 467.00625-469.99375 MHz "D" Band Mobile Transmit	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
470 - 585 MHz	FIXED MOBILE BROADCASTING	MOBILE		470-470.5 MHz RRD usage (Medical Telemetry only)	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
470 - 585 MHz (Continued)	FIXED MOBILE BROADCASTING (Continued)	MOBILE		470.5-471 MHz Land Mobile "FNX" Band Simplex (25 kHz channeling)	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
				471.-471.5 MHz RRD and Telemetry and Telecommand usage	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
470 - 585 MHz (Continued)	FIXED MOBILE BROADCASTING (Continued)	MOBILE (Continued)		471.5 -476.71.99375 MHz Land Mobile "FNX" Band Simplex (25 kHz channeling) 472.00625- 475.99375 MHz Land Mobile "FN" Band Mobile Transmit 476.00625-476.4 MHz Land Mobile "FNX" Band Simplex (12.5 kHz channeling):	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
				476.400-477.425 MHz Personal Radio Service "PRS" Band	General licence for PRS usage PIB23: VHF and UHF Mobile Service bands in New Zealand RFS39: Personal Radio Service

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
470 - 585 MHz (Continued)	FIXED MOBILE BROADCASTING (Continued)	MOBILE (Continued)		477.43125-477.98125 MHz Land Mobile "FNX" Band Simplex (12.5 kHz channels) 477.99375 - 481.98125: MHz Land Mobile "FN" Band Base Transmit 481.99375-483.98125 MHz Land Mobile "FNX" Band Simplex (12.5 kHz channels) 483.99375 - 487.98125 MHz Land Mobile "FN" Band Base Transmit 487.99375-489.99375 MHz Land Mobile "FNX" Band Simplex (12.5 kHz channels) 490.00625-493.99375 MHz Land Mobile "FN" Band Mobile Transmit 494 - 502 MHz under consideration for fixed services supporting broadcast transmissions in 502 - 802 MHz	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
470 - 585 MHz (Continued)	FIXED MOBILE BROADCASTING (Continued)	502 - 806 MHz BROADCASTING		UHF Television (BAND IV) 502 - 518 MHz: Block 0	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
470 - 585 MHz (Continued)	FIXED MOBILE BROADCASTING (Continued)	502 - 806 MHz BROADCASTING (Continued)		UHF Television (BAND IV) 28 x 8 MHz Channels in 7 Blocks under the Management Right Regime 518 - 550 MHz: Block 1 550 - 582 MHz: Block 2	Radio Spectrum Auctions Broadcasting POLDOCs General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus
				UHF Television (BAND V) 582 - 614 MHz: Block 3 (Government Reserved) 614 - 646 MHz: Block 4 (Government Reserved) RRDs, audio/video senders in particular and amateur use	Broadcasting POLDOCs General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus Guide for visiting Amateur Radio Operators
585-610 MHz	FIXED MOBILE BROADCASTING RADIONAVIGATION S5.149				
610-890 MHz	FIXED MOBILE BROADCASTING S5.149 S5.311 S5.320			UHF Television (BAND V) 646 - 678 MHz: Block 5 678 - 710 MHz: Block 6 710 - 742 MHz: Block 7 742 - 774 MHz: Block 8 774 - 806 MHz: Block 9	Radio Spectrum Auctions Broadcasting POLDOCs General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus
	FIXED MOBILE BROADCASTING S5.149 S5.311 S5.320	806 - 812 MHz FIXED		806 - 812 MHz Fixed "KK" Band Alpha Transmit (11 x 500 kHz channelling)	PIB22: Fixed Service Bands in New Zealand

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
610-890 MHz (Continued)	FIXED MOBILE BROADCASTING S5.149 S5.311 S5.320 (Continued)	812 - 825.015 MHz MOBILE		812 - 813 MHz Land Mobile "ESD" Band (Emergency Services) Mobile Transmit 813 - 814 MHz Land Mobile Expanded TS Bands (Trunked Dispatch) Mobile Transmit 814 - 819 MHz Land Mobile "TS" Band (Trunked Dispatch) Mobile Transmit 819 - 824 MHz RRD and spread spectrum device usage 824 - 825.015 MHz AMPS Extension Band	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz General Licence for RRDs General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus PIB14: 800 MHz Trunked Dispatch Land Mobile System RFS32: UHF Trunked Dispatch Service POLDOC Land Mobile 003: Licensing of Land Mobile Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
610-890 MHz (Continued)	FIXED MOBILE BROADCASTING S5.149 S5.311 S5.320 (Continued)	825.015 - 849 MHz MOBILE		825.015 - 845 MHz AMPS / DAMPS Cellular Band (Private Management Rights)	Radio Spectrum Auctions
			NLU	845 - 849 MHz Alternative Pairing with 890-894 MHz For Cellular Telephony	
		849 - 851 MHz FIXED	4	849 - 851 MHz Studio to Transmitter Linking	PIB22: Fixed Service Bands in New Zealand
		851 - 869.075 MHz FIXED MOBILE		851 - 857 MHz Fixed "KK" Band Beta Transmit (11 x 500 kHz channelling)	PIB22: Fixed Service Bands in New Zealand
				857 - 858 MHz Land Mobile "ESD" Band (Emergency Services Base Transmit	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
610-890 MHz (Continued)	FIXED MOBILE BROADCASTING S5.149 S5.311 S5.320 (Continued)	851 - 869.075 MHz FIXED MOBILE (Continued)		858 - 859 MHz Land Mobile Expanded TS Bands (Trunked Dispatch) Base Transmit 859 - 864 MHz Land Mobile "TS" Band (Trunked Dispatch) Base Transmit	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz PIB14: 800 MHz Trunked Dispatch Land Mobile System RFS32: UHF Trunked Dispatch Service POLDOC Land Mobile 003: Licensing of Land Mobile Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
610-890 MHz (Continued)	FIXED MOBILE BROADCASTING S5.149 S5.311 S5.320 (Continued)	851 - 869.075 MHz FIXED MOBILE (Continued)		864 - 868.1 MHz Cordless Telephone "CT2" Band 864 - 868 MHz Spread spectrum devices	General Licence for CT1 and CT2 cordless telephones General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus RFS30: Cordless Telephones
				868.1 - 869.025 MHz Land Mobile "TX" Band Simplex operation	PIB23: VHF and UHF Mobile Service bands in New Zealand RFS25: VHF/UHF Land Mobile Service (25 kHz channelling) RFS26: VHF/UHF Land Mobile Service (12.5 kHz channelling) RFS31: Non-Speech Apparatus Using Angle Modulation with 25 kHz Carrier Frequency Separation and a Maximum Deviation of 5 kHz POLDOC Land Mobile 003: Licensing of Land Mobile Services
		MOBILE		869.025 - 870.015 MHz AMPS Extension Band	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
610-890 MHz (Continued)	FIXED MOBILE BROADCASTING S5.149 S5.311 S5.320 (Continued)	FIXED MOBILE		870.015 - 890 MHz AMPS / DAMPS Cellular Band (Private Management Rights)	Radio Spectrum Auctions
890-942 MHz	FIXED MOBILE BROADCASTING Radiolocation	FIXED MOBILE		890 - 915 MHz GSM Cellular Band (Private & Crown) Management Rights - mobile transmit	Radio Spectrum Auctions
				915 - 921 MHz Fixed "K" Band - Studio Transmitter Links	PIB22: Fixed Service Bands in New Zealand RFS37: Studio to Transmitter Linking System POLDOC Fixed 001: Studio to Transmitter Links (STL's)
				921 - 929 MHz ISM, RRD, spread spectrum devices and Amateur usage	General Licence for RRDs General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry Guide for visiting Amateur Radio Operators
				929 - 931.7 MHz Paging "KP" Band	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
890-942 MHz (Continued)	FIXED MOBILE BROADCASTING Radiolocation (Continued)	FIXED MOBILE (Continued)		931.7 - 932 MHz "K" Band - Studio Transmitter Links	PIB22: Fixed Service Bands in New Zealand RFS37: Studio to Transmitter Linking System POLDOC Fixed 001: Studio to Transmitter Links (STL's)
942-960 MHz	FIXED MOBILE BROADCASTING S5.320	FIXED MOBILE		935 - 960 MHz GSM Cellular Band (Private and Crown) Management Rights - Base Transmit	Radio Spectrum Auctions
960-1 215 MHz	AERONAUTICAL RADIONAVIGATION S5.328	AERONAUTICAL RADIONAVIGATION	104	Aeronautical Radionavigation	
1 215-1 240 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.329 SPACE RESEARCH (active) S5.332	RADIOLOCATION RADIONAVIGATION-SATELLITE	NLU	Radiolocation Radionavigation	
1 240-1 260 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.329 SPACE RESEARCH (active) Amateur S5.332	RADIOLOCATION RADIONAVIGATION-SATELLITE Amateur	14	1240-1300 MHz Radiolocation Amateur	Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
1 260-1 300 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.329 S5.329A SPACE RESEARCH (active) Amateur S5.282 S5.332	RADIOLOCATION RADIONAVIGATION-SATELLITE Amateur (Continued)		1240-1300 MHz Radiolocation Amateur (Continued)	Guide for visiting Amateur Radio Operators (Continued)
1 300-1 350 MHz	AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.149	AERONAUTICAL RADIONAVIGATION Radiolocation		Radiolocation and Radionavigation - primary surface RADAR at major airports	
1 350-1 400 MHz	RADIOLOCATION S5.149 S5.339	RADIOLOCATION			
1 400-1 427 MHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341	RADIO ASTRONOMY SPACE RESEARCH (passive)	NLU	Astronomy and Space Research	
1 427-1 429 MHz	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile S5.341	FIXED		1427-1461.5 MHz Fixed "L" Band point to point linking Alpha Transmit Fixed "LL" Band for narrow band microwave linking in planning stages	PIB22: Fixed Service Bands in New Zealand
1 429-1 452 MHz	FIXED MOBILE S5.341				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
1 452-1 492 MHz	FIXED MOBILE BROADCASTING S5.345 BROADCASTING SATELLITE (Sound) S5.345 S5.347 S5.341	FIXED (Continued)		1427-1461.5 MHz Fixed "L" Band point to point linking Alpha Transmit Fixed "LL" Band for narrow band microwave linking in planning stages (Continued)	PIB22: Fixed Service Bands in New Zealand (Continued)
		FIXED BROADCASTING BROADCASTING SATELLITE (Sound)		1465 - 1490 MHz Future DAB usage in planning 1490 - 1492 MHz Fixed "L" band Beta Transmit	ECD2000/5: A draft bandplan for Digital Audio Broadcasting PIB22: Fixed Service Bands in New Zealand
1 492-1 525 MHz	FIXED MOBILE S5.341 S5.348A	FIXED		1492 - 1525 MHz Fixed "L" Band Beta Transmit Fixed "LL" Band for narrow band microwave linking in planning stages	PIB22: Fixed Service Bands in New Zealand
1 525-1 530 MHz	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite Mobile S5.341 S5.351 S5.354	MOBILE-SATELLITE (space-to-Earth)		1525 - 1559 MHz Mobile Satellite (space-to-Earth) - INMARSAT downlinks paired with 1626.5 - 1660.5 MHz	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
1 530-1 535 MHz	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.353A Earth exploration-satellite Fixed Mobile S5.341 S5.351 S5.354	MOBILE-SATELLITE (space-to-Earth) (Continued)		1525 - 1559 MHz Mobile Satellite (space-to-Earth) - INMARSAT downlinks paired with 1626.5 - 1660.5 MHz (Continued)	
1 535-1 559 MHz	MOBILE-SATELLITE (space-to-Earth) S5.341 S5.351 S5.353A S5.354 S5.356 S5.357 S5.357A				
1 559-1 610 MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) S5.341 S5.359	RADIONAVIGATION-SATELLITE (Space-to-Earth)		1559 - 1610 MHz Radionavigation Satellite (space-to-Earth) Global Positioning System (GPS)	
1 610-1 610.6 MHz	MOBILE – SATELLITE (Earth-to-Space) AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-Space) S5.341 S5.364 S5.366 S5.367 S5.368 S5.372	MOBILE SATELLITE (Earth-to-Space)		1610 - 1626.5 MHz Mobile-Satellite (Earth-to-space) paired with 2483.5 MHz	
1 610.6-1 613.8 MHz	MOBILE-SATELLITE (Earth-To-Space RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-Space) S5.149 S5.341 S5.364 S5.366 S5.367 S5.368				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
1 613.8-1 626.5 MHz	MOBILE-SATELLITE (Earth-to-Space) AERONAUTICAL RADIONAVIGATION Mobile-Satellite (Space-to-Earth) Radiodetermination-satellite (Earth-to-Space) S5.341 S5.364 S5.365 S5.366 S5.367 S5.368 S5.372	MOBILE SATELLITE (Earth-to-Space) (Continued)		1610 - 1626.5 MHz Mobile-Satellite (Earth-to-space) paired with 2483.5 MHz (Continued)	
1 626.5-1 660 MHz	MOBILE-SATELLITE (Earth-to-Space) S5.341 S5.351 S5.353A S5.354 S5.357A S5.374 S5.375 S5.376	MOBILE-SATELLITE (Earth-to-Space)		1626.5 - 1660 MHz Mobile Satellite (Earth-to-Space) - INMARSAT uplinks paired with 1525 - 1529 MHz	
1 660-1 660.5 MHz	MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY S5.149 S5.341 S5.351 S5.354 S5.376A	RADIOASTRONOMY	NLU		
1 660.5-1 668.4 MHz	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile S5.149 S5.341 S5.379A	RADIO ASTRONOMY SPACE RESEARCH (passive) METEOROLOGICAL AIDS	NLU		
1 668.4-1 670 MHz	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149 S5.341				
1 670-1 675 MHz	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE S5.380 S5.341	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE	NLU	Meteorological satellite downlinks	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
1 675-1 690 MHz	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.341	METEOROLOGICAL SATELLITE (Space-to-Earth)	NLU	1675 – 1710 MHz Meteorological –Satellite downlinks	
	1 690 - 1 700 MHz METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) S5.289 S5.341				
	1 700-1 710 MHz FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical Mobile S5.289 S5.341				
1 710-1 930 MHz	FIXED MOBILE S5.380 S5.149 S5.341 S5.385 S5.388	FIXED MOBILE	N/A	1710 - 1880 MHz Private Management Rights - suitable for 2nd and 3rd Generation cellular technologies and fixed linking.	Radio Spectrum Auctions
				1880 - 1900 MHz Generally Licensed DECT systems 1185 - 1920 MHz Generally Licensed PHS service 1900 - 1920 MHz DECT extension band	General Licence for DECT General Licence for PHS POLDOC Land Mobile 004: Operation of Personal Communications Services in the Band 1.7 - 2.0 GHz
1 930-1 970 MHz	FIXED MOBILE S5.388		N/A	1920 - 1980 MHz Private Management Rights - suitable for 2nd and 3rd Generation cellular technologies and fixed linking.	Radio Spectrum Auctions

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
1 970-1 980 MHz	FIXED MOBILE S5.388	FIXED MOBILE (Continued)	N/A	1920 - 1980 MHz Private Management Rights - suitable for 2nd and 3rd Generation cellular technologies and fixed linking. (Continued)	Radio Spectrum Auctions (Continued)
1 980-2 010 MHz	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.388 S5.389A	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)		1980 - 2010 MHz Fixed point to point links and possible future mobile satellite uplinks.	
2010-2 025 MHz	FIXED MOBILE S5.388	FIXED MOBILE	N/A	2010 - 2170 MHz Private Management Rights - suitable for 2nd and 3rd Generation cellular technologies and fixed linking.	Radio Spectrum Auctions
2 025-2 110 MHz	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) S5.392				
	(2 110-2 120) FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) S5.388				
2 120-2 160 MHz	FIXED MOBILE S5.388				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
2 160-2 170 MHz	FIXED MOBILE S5.388	FIXED MOBILE (Continued)		2010 - 2170 MHz Private Management Rights - suitable for 2nd and 3rd Generation cellular technologies and fixed linking. (Continued)	Radio Spectrum Auctions (Continued)
2 170-2 200 MHz	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) S5.388 S5.389A	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth)		2170 - 2200 MHz Fixed point to point links and possible future mobile satellite downlinks.	
2 200-2 290 MHz	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE S5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) S5.392	FIXED MOBILE		2200 - 2300 MHz Private Management Rights - suitable for 2nd and 3rd Generation cellular technologies and fixed linking.	Radio Spectrum Auctions
2 290-2 300 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)				
2 300-2 450 MHz	FIXED MOBILE RADIOLOCATION Amateur S5.150 S5.282 S5.396	FIXED MOBILE Amateur		2300 - 2396 MHz 12 x 8 MHz Private Management Rights suitable for MMDS usage	Radio Spectrum Auctions
				2396-2400 MHz Amateur usage	Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
2 300-2 450 MHz (Continued)	FIXED MOBILE RADIOLOCATION Amateur S5.150 S5.282 S5.396 (Continued)	FIXED MOBILE Amateur (Continued)		2400 - 2450 MHz ISM band, RRDs, Amateur and some broadband extensive linking using spread spectrum technologies	General Licence for RRDs General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
2 450-2 483.5 MHz	FIXED MOBILE RADIOLOCATION S5.150	FIXED MOBILE		2450 - 2483.5 MHz ISM band, RRDs and extensive broadband fixed linking using spread spectrum technologies. This band identified for bluetooth and RLAN technologies. ISM usage includes microwave oven operation	General Licence for RRDs General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus
2 483.5-2 500 MHz	FIXED MOBILE MOBILE-SATELLITE (Space-to-Earth) RADIOLOCATION Radiodetermination-satellite (space-to-Earth) S5.398 S5.150 S5.402	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth)		ISM band Mobile–Satellite (space-to-Earth) Paired with 1610 MHz	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
2 500-2 520 MHz	FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) S5.403 S5.414	FIXED	36	2500 - 2690 MHz "O" Band Spectrum identified for possible expansion of 3rd Generation Cellular services. Itinerant fixed linking for Television outside broadcast operations	PIB22: Fixed Service Bands in New Zealand ECD2000/3: Radio Spectrum Provision For Itinerant Fixed Linking In Support Of Television Production ECD2000/3: Summary of submissions and proposed work program
2 520-2 535 MHz	FIXED S5.409 S5.411 FIXED-SATELLITE (space-to-Earth) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.403				
2 535-2 655 MHz	FIXED S5.409 S5.411 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 S5.339				
2 655-2 670 MHz	FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.413 S5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.420				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
2 670-2 690 MHz	2 670-2 690 FIXED S5.409 S5.411 FIXED-SATELLITE (Earth-to-space) S5.415 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (passive) Radio astronomy Space research (passive) S5.149 S5.419 S5.420	FIXED (Continued)		2500 - 2690 MHz "O" Band Spectrum identified for possible expansion of 3rd Generation Cellular services. Itinerant fixed linking for Television outside broadcast operations (Continued)	PIB22: Fixed Service Bands in New Zealand ECD2000/3: Radio Spectrum Provision For Itinerant Fixed Linking In Support Of Television Production ECD200/3: Summary of submissions and proposed work program (Continued)
2 690-2 700 MHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	RADIO ASTRONOMY SPACE RESEARCH		Astronomy Space Research	
2 700-2 900 MHz	AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.423	AERONAUTICAL RADIONAVIGATION Radiolocation		Aeronautical Navigation Radiolocation (Including RADAR)	
2 900-3 100 MHz	RADIONAVIGATION S5.426 Radiolocation S5.425 S5.427	RADIONAVIGATION Radiolocation		Radiolocation (including RADAR) 2900 - 3400 MHz Spread spectrum devices	General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus

2.3.6 SHF Band (3 - 30 GHz)

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
2 900-3 100 MHz	RADIONAVIGATION S5.426 Radiolocation S5.425 S5.427	RADIONAVIGATION Radiolocation		Radiolocation (including RADAR) 2900 - 3400 MHz Spread spectrum devices	General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus
3 100-3 300 MHz	RADIOLOCATION Earth exploration-satellite (active) Space research (active) S5.149	RADIOLOCATION			
3 300-3 400 MHz	RADIOLOCATION Amateur S5.149	RADIOLOCATION Amateur		Radiolocation Amateur 2900 - 3400 MHz Spread spectrum devices	Guide for visiting Amateur Radio Operators General Licence for Spread Spectrum Apparatus Radio Frequency Specification RFS29
3 400-3 500 MHz	FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile Radiolocation S5.433 S5.282	3400 - 3410 MHz RADIOLOCATION Amateur Amateur Satellite 3410 - 3500 MHz FIXED RADIOLOCATION Amateur Mobile		This band is currently being planned to allow for the possible introduction of WLL/FWA.	ECD2000/4: A draft bandplan for the Band 3400 - 3600 MHz ECD2000/4: Summary of Submissions POLDOC Satellite 004: Licensing of Fixed Satellite Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
3 500-3 700 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation S5.433	3500 - 3589 MHz FIXED RADIOLOCATION		This band is currently being planned to allow for the possible introduction of WLL/FWA. (Continued)	
		3589 - 3700 MHz FIXED FIXED-SATELLITE (Space-to-Earth)		3600 - 4200 MHz Fixed 'P' band - usage must be co-ordinated with 'C' band Satellite services.	PIB22: Fixed Service Bands in New Zealand POLDOC Satellite 004: Licensing of Fixed Satellite Services
3 700-4 200 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (Space-to-Earth)			
4 200-4 400 MHz	AERONAUTICAL RADIONAVIGATION S5.438 S5.440	AERONAUTICAL RADIONAVIGATION	NLU	Radio Altimeters and associated ground transponders.	
4 400-4 500 MHz	FIXED MOBILE	FIXED		Fixed "PC" Band Planned fixed satellite service (space-to-Earth) as per International Radio Regulations Appendix 30B	POLDOC Fixed 002: Use of Frequency Band 4.4 - 5 GHz
4 500-4 800 MHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.441 MOBILE				
4 800-4 990 MHz	FIXED MOBILE S5.442 Radio astronomy S5.149 S5.339				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
4 990-5 000 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) S5.149	Unallocated	NLU	Fixed "PC" Band Planned fixed satellite service (space-to-Earth) as per International Radio Regulations Appendix 30B (Continued0	POLDOC Fixed 002: Use of Frequency Band 4.4 - 5 GHz (Continued)
5 000-5 150 MHz	AERONAUTICAL RADIONAVIGATION S5.367 S5.444 S5.444A	RADIOLOCATION RADIONAVIGATION	NLU	Radiolocation, Radionavigation - possible future use for microwave landing system (MLS)	
5 150-5 250 MHz	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE SERVICE (Earth-to-space) S5.447A S5.446 S5.447B S5.447C	AERONAUTICAL RADIONAVIGATION	1	5150 - 5350 MHz RRD usage, RLAN in particular, usage of 5150 - 5250 MHz under review.	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus POLDOC Other Services 002: Protection of MSS uplinks in the band 5150 - 5350 MHz
5 250-5 255 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH S5.447D S5.448A				
5 255- 5 350 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.448A				
5 350-5 460 MHz	EARTH EXPLORATION-SATELLITE (active) S5.448B AERONAUTICAL RADIONAVIGATION S5.449 Radiolocation	AERONAUTICAL RADIONAVIGATION	NLU	Restricted to airborne RADAR and associated beacons	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
5 460-5 470 MHz	RADIONAVIGATION S5.449 Radiolocation	AERONAUTICAL RADIONAVIGATION (Continued)	NLU	Restricted to airborne RADAR and associated beacons (Continued)	
5 470-5 650 MHz	MARITIME RADIONAVIGATION Radiolocation S5.452	MARITIME RADIONAVIGATION Radiolocation	5	Ground based meteorological RADAR with co-primary status	
5 650-5 725 MHz	RADIOLOCATION Amateur Space research (deep space) S5.282	RADIOLOCATION Amateur	NLU	5650 - 5725 MHz Radiolocation 5725 - 5830 MHz Amateur radio beacons 5725 - 5875 MHz Spread spectrum devices 5650 - 5875 MHz RRD and ISM usage	Guide for visiting Amateur Radio Operators General Licence for RRDs General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
5 725-5 830 MHz	RADIOLOCATION Amateur S5.150		2		
5 830-5 850 MHz	RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) S5.150	RADIOLOCATION Amateur Amateur Satellite (space-to-Earth)	NLU		
5 850-5 925 MHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation S5.150	FIXED	NLU	5875 - 5925 MHz No published channel plan.	PIB22: Fixed Service Bands in New Zealand

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
5 925-6 700 MHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.149 S5.440 S5.458	FIXED FIXED-SATELLITE (Earth-to-space)		5925 - 6420 MHz Fixed "R" band 5925 - 6700 MHz Fixed Satellite Service "C" band uplinks (INMARSAT) 6420 - 7100 MHz Fixed "T" band 6725 - 7025 Planned Fixed Satellite Service allocation as per International Radio Regulations Appendix 30B	PIB22: Fixed Service Bands in New Zealand POLDOC Satellite 001: Licensing of Satellite News Gathering (SNG) Transmitting Facilities POLDOC Satellite 004: Licensing of Fixed Satellite Services
6 700-7 075 MHz	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) S5.441 MOBILE S5.458 S5.458A S5.458B S5.458C				
7 075-7 250 MHz	FIXED MOBILE S5.458 S5.460	FIXED		7100 - 7425 MHz Fixed "V" Band utilised for point to point linking and TV outside broadcasting.	PIB22: Fixed Service Bands in New Zealand ECD2000/3: Radio Spectrum Provision For Itinerant Fixed Linking In Support Of Television Production ECD200/3: Summary of submissions and proposed work program
7 250-7 300 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE S5.461				
7 300-7 450 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.461				
	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.461A	FIXED		7425 - 7730 MHz Fixed "U" Band for point to point linking	PIB22: Fixed Service Bands in New Zealand

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
7 450-7 550 MHz	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.461A	FIXED (Continued)		7425 - 7730 MHz Fixed "U" Band for point to point linking (Continued)	PIB22: Fixed Service Bands in New Zealand (Continued)
7 550-7 750 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	FIXED		7730 - 8290 MHz Fixed "W" Band for point to point linking	PIB22: Fixed Service Bands in New Zealand
7 750-7 850 MHz	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) S5.461B MOBILE except aeronautical mobile				
7 850-7 900 MHz	FIXED MOBILE except aeronautical mobile				
7 900-8 025 MHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.461				
8 025-8 175 MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.463 S5.462A				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
8 175-8 215 MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE S5.463 S5.462A				
8 215-8 400 MHz	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.463 S5.462A	FIXED		8290 - 8500 MHz Fixed "Y" band utilised for point to point linking and TV outside broadcast services	PIB22: Fixed Service Bands in New Zealand ECD2000/3: Radio Spectrum Provision For Itinerant Fixed Linking In Support Of Television Production ECD2000/3: Summary of submissions and proposed work program
8 400-8 500 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (Space-to-Earth) S5.465				
8 500-8 550 MHz	RADIOLOCATION	RADIOLOCATION	NLU		
8 550-8 650 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.469A				
8 650-8 750 MHz	RADIOLOCATION				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
8 750-8 850 MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION S5.470	RADIOLOCATION AERONAUTICAL RADIONAVIGATION	NLU		
8 850-9 000 MHz	RADIOLOCATION MARITIME RADIONAVIGATION S5.472	RADIOLOCATION MARITIME RADIONAVIGATION	NLU		
9 000-9 200 MHz	AERONAUTICAL RADIONAVIGATION Radiolocation	AERONAUTICAL RADIONAVIGATION	NLU		
9 200-9 300 MHz	RADIOLOCATION MARITIME RADIONAVIGATION S5.472 S5.474	RADIOLOCATION MARITIME RADIONAVIGATION	NLU	Maritime Radionavigation limited to shore based RADAR	
9 300-9 500 MHz	RADIONAVIGATION S5.476 Radiolocation S5.427 S5.474 S5.475	RADIONAVIGATION Radiolocation		Some Government usage Meteorological RADAR Shore based harbour control RADAR	
9 500-9 800 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) S5.476A	RADIOLOCATION RADIONAVIGATION	NLU		
9 800-10 000 MHz	RADIOLOCATION Fixed S5.479	RADIOLOCATION	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
10-10.45 GHz	FIXED MOBILE RADIOLOCATION Amateur S5.479	RADIOLOCATION Amateur	1	10.00 - 10.50 GHz Radiolocation Amateur	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan Guide for visiting Amateur Radio Operators
10.45-10.5 GHz	RADIOLOCATION Amateur Amateur-satellite				
10.5-10.55 GHz	FIXED MOBILE RADIOLOCATION	FIXED		Fixed "H" Band used for point to point linking	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan PIB22: Fixed Service Bands in New Zealand
10.55-10.6 GHz	FIXED MOBILE except aeronautical mobile Radiolocation				
10.6-10.68 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation S5.149 S5.482				
10.68-10.7 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	RADIO ASTRONOMY SPACE RESEARCH (passive)		Space Research (passive)	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
10.7-11.7 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.441 S5.484A MOBILE except aeronautical Mobile	FIXED		Fixed "Z" Band used for point to point linking	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan PIB22: Fixed Service Bands in New Zealand
11.7-12.2 GHz	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITES5.487 S5.492	BROADCASTING (including DATACASTING) BROADCASTING SATELLITE		Possible planning to utilise International Radio Regulations Appendix 30 assignments	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 002: Satellite Service Licences
12.2-12.5 GHz	FIXED MOBILE except aeronautical mobile BROADCASTING S5.484A S5.487 S5.491	12.2 - 12.375 GHz BROADCASTING (including DATACASTING) FIXED SATELLITE (space-to-Earth)		Datacasting operations in main centres on a co-ordinated basis with fixed satellite (VSAT) operations elsewhere.	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 002: Satellite Service Licences POLDOC Satellite 004: Licensing of Fixed Satellite Services
		12.375 - 12.5 GHz FIXED SATELLITE (space-to-earth)		Fixed satellite (VSAT and DTH)	
12.5-12.75 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE except aeronautical Mobile BROADCASTING-SATELLITE S5.493	BROADCASTING SATELLITE FIXED-SATELLITE (space-to-Earth)		Television service delivery via satellite	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 002: Satellite Service Licences POLDOC Satellite 004: Licensing of Fixed Satellite Services

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
12.75-13.25 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.441 MOBILE Space research (deep space) (space-to-Earth)	FIXED		Fixed "X" Band point to point linking including inter-cell site linking	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan PIB22: Fixed Service Bands in New Zealand
13.25-13.4 GHz	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION S5.497 SPACE RESEARCH (active) S5.498A	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION SPACE RESEARCH (active)	NLU	Aeronautical Radionavigation	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan
13.4-13.75 GHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH S5.501A Standard frequency and time signal-satellite (Earth-to-space) S5.501B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH	1	Government radiolocation usage	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 003: Protection of the GSO Orbit
13.75-14 GHz	FIXED-SATELLITE (Earth-to-space) S5.484A RADIOLOCATION Standard frequency and time signal-satellite (Earth-to-space) Space research S5.502 S5.503 S5.503A	FIXED SATELLITE (Earth-to-space)	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
14-14.25 GHz	FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 RADIONAVIGATION S5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research	FIXED-SATELLITE (Earth-to-space)	6	Satellite uplinks supporting fixed satellite service DTH and TV service via satellite delivery in 12.2 - 12.75 GHz	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 001: Licensing of Satellite News Gathering (SNG) Transmitting Facilities POLDOC Satellite 003: Protection of the GSO Orbit POLDOC Satellite 004: Licensing of Fixed Satellite Services
14.25-14.3 GHz	FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 RADIONAVIGATION S5.504 Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research				
14.3-14.4 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical Mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radionavigation-satellite				
14.4-14.47 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Space research (Space-to-Earth)				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
14.47-14.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) except aeronautical mobile-satellite Radio astronomy S5.149	FIXED-SATELLITE (Earth-to-space) (Continued)		Satellite uplinks supporting fixed satellite service DTH and TV service via satellite delivery in 12.2 - 12.75 GHz (Continued)	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 001: Licensing of Satellite News Gathering (SNG) Transmitting Facilities POLDOC Satellite 003: Protection of the GSO Orbit POLDOC Satellite 004: Licensing of Fixed Satellite Services (Continued)
14.5-14.8 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.510 MOBILE Space research	FIXED	81	Fixed "G" Band for point to point linking	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan PIB22: Fixed Service Bands in New Zealand
14.8-15.35 GHz	FIXED MOBILE Space research S5.339				
15.35-15.4 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	RADIO ASTRONOMY SPACE RESEARCH (passive)	NLU		POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
15.4-15.43 GHz	AERONAUTICAL RADIONAVIGATION S5.511D	AERONAUTICAL RADIONAVIGATION	NLU		POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan
15.43-15.63 GHz	FIXED-SATELLITE (space-to-Earth) (Earth-to-space) S5.511A AERONAUTICAL RADIONAVIGATION S5.511C	FIXED-SATELLITE (space-to-Earth) (Earth-to-space AERONAUTICAL RADIONAVIGATION	NLU		POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 003: Protection of the GSO Orbit
15.63-15.7 GHz	AERONAUTICAL RADIONAVIGATION S5.511D	AERONAUTICAL RADIONAVIGATION	NLU		POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan
15.7-16.6 GHz	RADIOLOCATION S5.513	RADIOLOCATION	NLU	15.70-17.30 GHz Radiolocation	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan
16.6-17.1 GHz	RADIOLOCATION Space research (deep space) (Earth-to-space) S5.513	RADIOLOCATION Space research (deep space) (Earth-to-space)	NLU		
17.1-17.3 GHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.513 S5.513A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active)	NLU		
17.3-17.7 GHz	FIXED-SATELLITE (Earth-to-space) S5.516 Radiolocation	FIXED-SATELLITE (Earth-to-space) Radiolocation	NLU		POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 003: Protection of the GSO Orbit

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
17.7-18.1 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.516 MOBILE	FIXED	188	Fixed "18G" Band used for point to point linking especially for inter cell site linking	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan PIB22: Fixed Service Bands in New Zealand
18.1-18.4 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.484A (Earth-to-space) S5.520 MOBILE S5.519				
18.4-18.6 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE				
18.6-18.8 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile Earth exploration-satellite (passive) Space research (passive)				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
18.8-19.3 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.523A MOBILE	FIXED FIXED-SATELLITE (space-to-Earth)	94	Fixed "18G" Band used for point to point linking especially for inter cell site linking 18.8 - 19.05 GHz NGSO fixed satellite downlinks for Teledesic network	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan PIB22: Fixed Service Bands in New Zealand POLDOC Satellite 004: Licensing of Fixed Satellite Services
19.3-19.7 GHz	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) S5.523B S5.523C S5.523D S5.523E MOBILE	FIXED	78	Fixed "18G" Band used for point to point linking especially for inter cell site linking	POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan PIB22: Fixed Service Bands in New Zealand
19.7-20.1 GHz	FIXED-SATELLITE (space-to-Earth) S5.484A Mobile-satellite (space-to-Earth)	FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth)	NLU		POLDOC Spectrum Band Plan 001: 10 - 20 GHz Band Plan POLDOC Satellite 004: Licensing of Fixed Satellite Services
20.1-20.2 GHz	FIXED-SATELLITE (space-to-Earth) S5.484A MOBILE-SATELLITE (space-to-Earth) S5.525 S5.526 S5.527 S5.528				
20.2-21.2 GHz	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
21.2-21.4 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	FIXED	672	Fixed "23G" Band used for point to point linking	PIB22: Fixed Service Bands in New Zealand
21.4-22 GHz	MOBILE FIXED MOBILE BROADCASTING-SATELLITE S5.530				
22-22.21 GHz	FIXED MOBILE except aeronautical mobile S5.149				
22.21-22.5 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) S5.149 S5.532				
22.5-22.55 GHz	FIXED MOBILE				
22.55-23.55 GHz	FIXED INTER-SATELLITE MOBILE S5.149				
23.55-23.6 GHz	FIXED MOBILE				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
23.6-24 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	RADIO ASTRONOMY SPACE RESEARCH (passive)	NLU		
24-24.05 GHz	AMATEUR AMATEUR-SATELLITE S5.150	AMATEUR AMATEUR-SATELLITE	NLU	Amateur usage RRD, spread spectrum devices and ISM usage	Guide for visiting Amateur Radio Operators General Licence for RRDs General Licence for Spread Spectrum Apparatus Radio Frequency Specification RFS29
24.05-24.25 GHz	RADIOLOCATION Amateur Earth exploration-satellite (active) S5.150	RADIOLOCATION Amateur	1	Amateur usage (including beacons) RRD (including spread spectrum) and ISM usage	Guide for visiting Amateur Radio Operators General Licence for RRDs General Licence for Spread Spectrum Apparatus RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
24.25-24.45 GHz	RADIONAVIGATION FIXED MOBILE	RADIONAVIGATION FIXED MOBILE	2	Experimental LMDS until March 2001	

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
24.45-24.65 GHz	FIXED INTER-SATELLITE MOBILE RADIONAVIGATION S5.533	FIXED MOBILE RADIONAVIGATION	-	24.5 GHz - 26.4 GHz Future LMDS usage in accordance with CEPT frequency arrangements in planning Experimental LMDS systems until March 2001	ECD2000/6: Radio Spectrum Provision for LMDS using the CEPT Band Plan for the Band 24.5-26.4 GHz
24.65-24.75 GHz	FIXED INTER-SATELLITE MOBILE S5.533	FIXED MOBILE	-		
24.75-25.25 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.535 MOBILE	FIXED MOBILE	-		
25.25-25.5 GHz	FIXED INTER-SATELLITE S5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)	FIXED MOBILE	-		
25.5-27 GHz	EARTH EXPLORATION-SATELLITE (space-to Earth) S5.536A FIXED INTER-SATELLITE S5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)	EARTH EXPLORATION-SATELLITE (space-to Earth) FIXED INTER-SATELLITE MOBILE Standard frequency and time signal-satellite (Earth-to-space)	-	26.4 - 28.35 GHz 6 Private Management Rights suitable for LMDS usage	Radio Spectrum Auctions
27-27.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE S5.536 S5.537 MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE MOBILE	-		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
27.5-28.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 MOBILE S5.538 S5.540	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE	-	26.4 - 28.35 GHz 6 Private Management Rights suitable for LMDS usage (Continued)	Radio Spectrum Auctions (Continued)
					POLDOC Satellite 003: Protection of the GSO Orbit POLDOC Satellite 004: Licensing of Fixed Satellite Services
28.5-29.1 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.484A S5.523A S5.539 MOBILE Earth exploration-satellite (Earth-to-space) S5.541 S5.540	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE	NLU		POLDOC Satellite 004: Licensing of Fixed Satellite Services
29.1-29.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.523C S5.523E S5.535A S5.539 S5.541A MOBILE Earth exploration-satellite (Earth-to-space) S5.541 S5.540				
29.5-29.9 GHz	FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 Earth exploration-satellite (Earth-to-space) S5.541 Mobile-satellite (Earth-to-space) S5.540				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
29.9-30 GHz	FIXED-SATELLITE (Earth-to-space) S5.484A S5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) S5.541 S5.543 S5.525 S5.526 S5.527 S5.538 S5.540	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)	NLU		POLDOC Satellite 004: Licensing of Fixed Satellite Services

2.3.7 EHF Band (30 - 300 GHz)

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
30-31 GHz	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth)	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)	NLU		POLDOC Satellite 004: Licensing of Fixed Satellite Services
31-31.3 GHz	FIXED MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research S5.544 S5.149	FIXED	12	Fixed point to point linking	
31.3-31.5 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	RADIO ASTRONOMY SPACE RESEARCH (passive) RADIONAVIGATION	NLU		
31.5-31.8 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile	NLU		
31.8-32 GHz	FIXED S5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) S5.547 S5.548	FIXED RADIONAVIGATION	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
32-32.3 GHz	FIXED S5.547A INTER-SATELLITE RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) S5.547 S5.548	FIXED RADIONAVIGATION	NLU		
32.3-33 GHz	FIXED S5.547A INTER-SATELLITE RADIONAVIGATION S5.547 S5.548	FIXED RADIONAVIGATION	NLU		
33-33.4 GHz	FIXED S5.547A RADIONAVIGATION S5.547	FIXED RADIONAVIGATION	NLU		
33.4-34.2 GHz	RADIOLOCATION	RADIOLOCATION	NLU		
34.2-34.7 GHz	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space)	RADIOLOCATION	NLU		
34.7-35.2 GHz	RADIOLOCATION Space research	RADIOLOCATION	NLU		
35.2-35.5 GHz	METEOROLOGICAL AIDS RADIOLOCATION	METEOROLOGICAL AIDS RADIOLOCATION	NLU		
35.5-36 GHz	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.551A	METEOROLOGICAL AIDS RADIOLOCATION SPACE RESEARCH (active)	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
36-37 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	FIXED MOBILE SPACE RESEARCH	NLU		
37-37.5 GHz	FIXED MOBILE SPACE RESEARCH (space-to-Earth)	FIXED	168	Fixed "38G" Band 37.058 - 38.178 GHz Alpha Transmit 38.248 - 39.438 GHz Beta Transmit Extensive use for inter-cell site linking	PIB22: Fixed Service Bands in New Zealand
37.5-38 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth)				
38-39.5 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth				
39.5-40 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth)				

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
40-40.5 GHz	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)	NOT ALLOCATED	-		
40.5-42.5 GHz	FIXED FIXED-SATELLITE (space-to-Earth) S5.551B S5.551E BROADCASTING BROADCASTING-SATELLITE Mobile				
42.5-43.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.552 MOBILE except aeronautical mobile RADIO ASTRONOMY				
43.5-47 GHz	MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.554				
47-47.2 GHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE		Amateur usage	Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
47.2-50.2 GHz	FIXED FIXED-SATELLITE (Earth-to-space) S5.552 MOBILE S5.149 S5.340 S5.552A S5.555	NOT ALLOCATED			
50.2-50.4 GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.340 S5.555A				
50.4-51.4 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Mobile-satellite (Earth-to-space)	FIXED	18	Fixed "50G" Band 50.42 - 50.62 GHz Alpha Transmit 50.92 - 51.12 GHz Beta Transmit 51.15-51.4 Not Allocated	PIB22: Fixed Service Bands in New Zealand
51.4-52.6 GHz	FIXED MOBILE S5.547 S5.556	NOT ALLOCATED	NLU		
52.6-54.25 GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.340 S5.556	SPACE RESEARCH (passive)	NLU		
54.25-55.78 GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE S5.556A SPACE RESEARCH (passive)	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
55.78-56.9 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 SPACE RESEARCH (passive) S5.547	NOT ALLOCATED	NLU		
56.9-57 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.558A MOBILE S5.558 SPACE RESEARCH (passive) S5.547				
57-58.2	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 SPACE RESEARCH (passive) S5.547	FIXED	18	Fixed "60G" Band 57.2 - 57.7 GHz Alpha Transmit 57.7 - 58.2 GHz Beta Transmit Short range broadband linking in Wellington	PIB22: Fixed Service Bands in New Zealand
58.2-59 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.547 S5.556	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
59-59.3 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE S5.556A MOBILE S5.558 RADIOLOCATION S5.559 SPACE RESEARCH (passive)	NOT ALLOCATED	NLU		
59.3-64 GHz	FIXED INTER-SATELLITE MOBILE S5.558 RADIOLOCATION S5.559 S5.138	FIXED MOBILE	1	61 - 61.5 GHz RRD usage	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
64-65 GHz	FIXED INTER-SATELLITE MOBILE except aeronautical mobile S5.547 S5.556	NOT ALLOCATED	NLU		
65-66 MHz	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH S5.547	NOT ALLOCATED	NLU		
66-71 GHz	INTER-SATELLITE MOBILE S5.553 S5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.554	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
71-74 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) S5.149 S5.556	NOT ALLOCATED	NLU		
74-75.5 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Space research (space-to-Earth)	NOT ALLOCATED	NLU		
75.5-76 GHz	AMATEUR AMATEUR-SATELLITE Space research (space-to-Earth)	NOT ALLOCATED	NLU		Guide for visiting Amateur Radio Operators
76-81 GHz	RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) S5.560	RADIOLOCATION Amateur Amateur-satellite	NLU	Band Identified for the possible introduction of vehicular collision avoidance radar	
81-84 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) Space research (space-to-Earth)	NOT ALLOCATED	NLU		
84-86 GHz	FIXED MOBILE BROADCASTING BROADCASTING-SATELLITE S5.561	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
86-92 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	NOT ALLOCATED	NLU		
92-94 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOLOCATION S5.149 S5.556	NOT ALLOCATED	NLU		
94-94.1 GHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.562	NOT ALLOCATED	NLU		
94.1-95 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOLOCATION	NOT ALLOCATED	NLU		
95-100 GHz	MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.554 S5.555	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
100-102 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.341	NOT ALLOCATED	NLU		
102-105 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE S5.341	NOT ALLOCATED	NLU		
105-116 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341	NOT ALLOCATED	NLU		
116-119.98 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.341	NOT ALLOCATED	NLU		
119.98-120.02 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) Amateur S5.341	NOT ALLOCATED	NLU		Guide for visiting Amateur Radio Operators

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
120.02-126 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.138	FIXED MOBILE	1	122 - 123 GHz	General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
126-134 GHz	FIXED INTER-SATELLITE MOBILE S5.558 RADIOLOCATION S5.559	NOT ALLOCATED	NLU		
134-142 GHz	MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation S5.149 S5.340 S5.554 S5.555	NOT ALLOCATED	NLU		
142-144 GHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	NLU		Guide for visiting Amateur Radio Operators
144-149 GHz	RADIOLOCATION Amateur Amateur-satellite S5.149 S5.555	RADIOLOCATION Amateur Amateur-satellite	NLU		Guide for visiting Amateur Radio Operators
149-150 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
150-151 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) S5.149 S5.385	NOT ALLOCATED	NLU		
151-156 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	NOT ALLOCATED	NLU		
156-158 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	NOT ALLOCATED	NLU		
158-164 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	NOT ALLOCATED	NLU		
164-168 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	NOT ALLOCATED	NLU		
168-170 GHz	FIXED MOBILE	NOT ALLOCATED	NLU		
170-174.5 GHz	FIXED INTER-SATELLITE MOBILE S5.558 S5.149 S5.385	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
174.5-176.5 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE S5.558 SPACE RESEARCH (passive) S5.149 S5.385	NOT ALLOCATED	NLU		
176.5-182 GHz	FIXED INTER-SATELLITE MOBILE S5.558 S5.149 S5.385	NOT ALLOCATED	NLU		
182-185 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	NOT ALLOCATED	NLU		
185-190 GHz	FIXED INTER-SATELLITE MOBILE S5.558 S5.149 S5.385	NOT ALLOCATED	NLU		
190-200 GHz	MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.341 S5.554	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
200-202 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.341	NOT ALLOCATED	NLU		
202-217 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE S5.341	NOT ALLOCATED	NLU		
217-231 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341	NOT ALLOCATED	NLU		
231-235 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	NOT ALLOCATED	NLU		
235-238 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive)	NOT ALLOCATED	NLU		
238-241 GHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	NOT ALLOCATED	NLU		

Frequency Range	International Region 3 Allocation	New Zealand Allocation	Use Lvl	Summary of Usage	References and Policies
241-248 GHz	RADIOLOCATION Amateur Amateur-satellite S5.138	RADIOLOCATION Amateur Amateur-satellite	1	244 - 246 GHz RRD usage	Guide for visiting Amateur Radio Operators General Licence for RRDs RFS29: Restricted Radiation Radio Apparatus RFS27: Telecommand and Telemetry
248-250 GHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	NLU		Guide for visiting Amateur Radio Operators
250-252 GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) S5.149 S5.555	NOT ALLOCATED	NLU		
252-265 GHz	MOBILE S5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.149 S5.385 S5.554 S5.555	NOT ALLOCATED	NLU		
265-275 GHz	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY S5.149	NOT ALLOCATED	NLU		
275-400 GHz	(Not allocated) S5.565	NOT ALLOCATED	NLU		Guide for visiting Amateur Radio Operators

2.4 ITU Region 3 Article S5 Footnotes

S5.53 Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated.

S5.54 Administrations conducting scientific research using frequencies below 9 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference.

S5.57 The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz (72-84 kHz and 86-90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.

S5.60 In the bands 70-90 kHz (70-86 kHz in Region 1) and 110-130 kHz (112-130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.

S5.62 Administrations which operate stations in the radionavigation service in the band 90-110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.

S5.64 Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.

S5.73 The band 285-325 kHz (283.5-325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service.

S5.76 The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405-415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5-413.5 kHz.

S5.79 The use of the bands 415-495 kHz and 505-526.5 kHz (505-510 kHz in Region 2) by the maritime mobile service is limited to radiotelegraphy.

S5.79A When establishing coast stations in the NAVTEX service on the frequencies 490 kHz, 518 kHz and 4209.5 kHz, administrations are strongly recommended to coordinate the operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution 339 (Rev.WRC-97)).(WRC-97)

S5.81 The bands 490-495 kHz and 505-510 kHz shall be subject to the provisions of Appendix S13, § 15 1), Part A2. (WRC-97)

S5.82 In the maritime mobile service, the frequency 490 kHz is, from the date of full implementation of the GMDSS (see Resolution 331 (Rev.WRC-97)), to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles S31 and S52. In using the band 415-495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz.

S5.83 The frequency 500 kHz is an international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles S31 and S52, and in Appendix S13.

S5.84 The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles S31 and S52 and in Appendix S13. (WRC-97)

S5.97 In Region 3, the Loran system operates either on 1850 kHz or 1950 kHz, the bands occupied being 1825-1875 kHz and 1925-1975 kHz respectively. Other services to which the band 1800-2000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1850 kHz or 1950 kHz.

S5.106 In Regions 2 and 3, provided no harmful interference is caused to the maritime mobile service, the frequencies between 2065 kHz and 2107 kHz may be used by stations of the fixed service communicating only within national borders and whose mean power does not exceed 50 W. In notifying the frequencies, the attention of the Bureau should be drawn to these provisions.

S5.108 The carrier frequency 2182 kHz is an international distress and calling frequency for radiotelephony. The conditions for the use of the band 2173.5-2190.5 kHz are prescribed in Articles S31 and S52 and in Appendix S13.

S5.109 The frequencies 2187.5 kHz, 4207.5 kHz, 6312 kHz, 8414.5 kHz, 12577 kHz and 16804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article S31.

S5.110 The frequencies 2174.5 kHz, 4177.5 kHz, 6268 kHz, 8376.5 kHz, 12520 kHz and 16695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article S31.

S5.111 The carrier frequencies 2182 kHz, 3023 kHz, 5680 kHz, 8364 kHz and the frequencies 121.5 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article S31 and in Appendix S13.

The same applies to the frequencies 10003 kHz, 14993 kHz and 19993 kHz, but in each of these cases emissions must be confined in a band of ± 3 kHz about the frequency.

S5.113 For the conditions for the use of the bands 2300-2495 kHz (2498 kHz in Region 1), 3200-3400 kHz, 4750-4995 kHz and 5005-5060 kHz by the broadcasting service, see Nos. S5.16 to S5.20, S5.21 and S23.3 to S23.10.

S5.115 The carrier (reference) frequencies 3023 kHz and 5680 kHz may also be used, in accordance with Article S31 and Appendix S13 by stations of the maritime mobile service engaged in coordinated search and rescue operations.

S5.116 Administrations are urged to authorize the use of the band 3155-3195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3155 kHz and 3400 kHz to suit local needs.

S5.120 For the use of the bands allocated to the amateur service at 3.5 MHz, 7.0 MHz, 10.1 MHz, 14.0 MHz, 18.068 MHz, 21.0 MHz, 24.89 MHz and 144 MHz in the event of natural disasters, see Resolution 640 [This Resolution was abrogated by WRC-97].

S5.126 In Region 3, the stations of those services to which the band 3995-4005 kHz is allocated may transmit standard frequency and time signals.

S5.127 The use of the band 4000-4063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. S52.220 and Appendix S17).

S5.129 On condition that harmful interference is not caused to the maritime mobile service, the frequencies in the bands 4063-4123 kHz and 4130-4438 kHz may be used exceptionally by stations in the fixed service communicating only within the boundary of the country in which they are located with a mean power not exceeding 50 W.

S5.130 The conditions for the use of the carrier frequencies 4125 kHz and 6215 kHz are prescribed in Articles S31 and S52 and in Appendix S13.

S5.131 The frequency 4209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques. (WRC-97)

S5.132 The frequencies 4210 kHz, 6314 kHz, 8416.5 kHz, 12579 kHz, 16806.5 kHz, 19680.5 kHz, 22376 kHz and 26100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix S17).

S5.134 The use of the bands 5900-5950 kHz, 7300-7350 kHz, 9400-9500 kHz, 11600-11650 kHz, 12050- 12100 kHz, 13570-13600 kHz, 13800-13870 kHz, 15600-15800 kHz, 17480-17550 kHz and 18900-19020 kHz by the broadcasting service is limited to single-sideband emissions with the characteristics specified in Appendix S11 or to any other spectrum-efficient modulation techniques recommended by ITU-R. Access to these bands shall be subject to the decisions of a competent conference. (WRC-97)

S5.136 The band 5900-5950 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis, as well as to the following services: in Region 1 to the land mobile service on a primary basis, in Region 2 to the mobile except aeronautical mobile (R) service on a primary basis, and in Region 3 to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (Rev.WRC-95). After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services,

administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.137 On condition that harmful interference is not caused to the maritime mobile service, the bands 6200-6213.5 kHz and 6220.5-6525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.

S5.138 The following bands:

6765-6795 kHz (centre frequency 6780 kHz),

433.05-434.79 MHz (centre frequency 433.92 MHz) in Region 1 except in the countries mentioned in No. S5.280,

61-61.5 GHz (centre frequency 61.25 GHz),

122-123 GHz (centre frequency 122.5 GHz), and

244-246 GHz (centre frequency 245 GHz)

are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU-R Recommendations.

S5.143 The band 7300-7350 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis and to the land mobile service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (Rev.WRC-95). After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.144 In Region 3, the stations of those services to which the band 7995-8005 kHz is allocated may transmit standard frequency and time signals.

S5.145 The conditions for the use of the carrier frequencies 8291 kHz, 12290 kHz and 16420 kHz are prescribed in Articles S31 and S52 and in Appendix S13.

S5.146 The bands 9400-9500 kHz, 11600-11650 kHz, 12050-12100 kHz, 15600-15800 kHz, 17480-17550 kHz and 18900-19020 kHz are allocated to the fixed service on a primary basis until 1 April 2007, subject to application of the procedure referred to in Resolution 21 (Rev.WRC-95). After 1 April 2007, frequencies in these bands may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.147 On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9775-9900 kHz, 11650-11700 kHz and 11975-12050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.

S5.149 In making assignments to stations of other services to which the bands:

13360-13410 kHz, 4950-4990 MHz, 72.77-72.91 GHz*, 265-275 GHz,

25550-25670 kHz, 4990-5000 MHz, 93.07-93.27 GHz*, 265.64-266.16 GHz*,

37.5-38.25 MHz, 6650-6675.2 MHz*, 97.88-98.08 GHz*, 267.34-267.86 GHz*,

73-74.6 MHz in Regions 1 and 3, 10.6-10.68 GHz, 140.69-140.98 GHz*, 271.74-272.26 GHz*

150.05-153 MHz in Region 1, 14.47-14.5 GHz*, 144.68-144.98 GHz*,

322-328.6 MHz*, 22.01-22.21 GHz*, 145.45-145.75 GHz*,

406.1-410 MHz, 22.21-22.5 GHz, 146.82-147.12 GHz*,

608-614 MHz in Regions 1 and 3, 22.81-22.86 GHz*, 150-151 GHz*,

1330-1400 MHz*, 23.07-23.12 GHz*, 174.42-175.02 GHz*,

1610.6-1613.8 MHz*, 31.2-31.3 GHz, 177-177.4 GHz*,

1660-1670 MHz, 31.5-31.8 GHz in Regions 1 and 3, 178.2-178.6 GHz*,

1718.8-1722.2 MHz*, 36.43-36.5 GHz*, 181-181.46 GHz*,

2655-2690 MHz 42.5-43.5 GHz, 186.2-186.6 GHz*,

3332-3339 MHz*, 42.77-42.87 GHz*, 250-251 GHz*,

3260-3267 MHz*, 43.07-43.17 GHz*, 257.5-258 GHz*,

3345.8-3352.5 MHz*, 43.37-43.47 GHz*, 261-265 GHz

4825-4835 MHz*, 48.94-49.04 GHz*, 262.24-262.76 GHz*,

are allocated (* indicates radio astronomy use for spectral line observations), administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. S4.5 and S4.6 and Article S29). (WRC-97)

S5.150 The following bands:

13553-13567 kHz (centre frequency 13560 kHz),

26957-27283 kHz (centre frequency 27120 kHz),

40.66-40.70 MHz (centre frequency 40.68 MHz),

902-928 MHz in Region 2 (centre frequency 915 MHz),

2400-2500 MHz (centre frequency 2450 MHz),

5725-5875 MHz (centre frequency 5800 MHz), and

24-24.25 GHz (centre frequency 24.125 GHz)

are also designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within these bands must accept harmful interference which may be caused by these applications. ISM equipment operating in these bands is subject to the provisions of No. S15.13.

S5.151 The bands 13570-13600 kHz and 13800-13870 kHz are allocated, until 1 April 2007, to the fixed service on a primary basis and to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (Rev.WRC-95). After 1 April 2007, frequencies in these bands may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.155B The band 21870-21924 kHz is used by the fixed service for provision of services related to aircraft flight safety.

S5.156A The use of the band 23200-23350 kHz by the fixed service is limited to provision of services related to aircraft flight safety.

S5.157 The use of the band 23350-24000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.

S5.162 Additional allocation: in Australia and New Zealand, the band 44-47 MHz is also allocated to the broadcasting service on a primary basis.

S5.166 Alternative allocation: in New Zealand, the band 50-51 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis; the band 53-54 MHz is allocated to the fixed and mobile services on a primary basis.

S5.170 Additional allocation: in New Zealand, the band 51-53 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.180 The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons.

Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.

S5.198 Additional allocation: the band 117.975-136 MHz is also allocated to the aeronautical mobile-satellite (R) service on a secondary basis, subject to agreement obtained under No. S9.21. (WRC-97)

S5.199 The bands 121.45-121.55 MHz and 242.95-243.05 MHz are also allocated to the mobile-satellite service for the reception on board satellites of emissions from emergency position-indicating radiobeacons transmitting at 121.5 MHz and 243 MHz (see Appendix S13).

S5.200 In the band 117.975-136 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article S31 and Appendix S13 for distress and safety purposes with stations of the aeronautical mobile service.

S5.203 In the band 136-137 MHz, existing operational meteorological satellites may continue to operate, under the conditions defined in No. S4.4 with respect to the aeronautical mobile service, until 1 January 2002. Administrations shall not authorize new frequency assignments in this band to stations in the meteorological-satellite service. (WRC-97)

S5.208 The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. (WRC-97)

S5.208A In making assignments to space stations in the mobile-satellite service in the bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in Table 1 of Recommendation ITU-R RA.769-1. (WRC-97)

S5.209 The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454- 456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems. (WRC-97)

S5.218 Additional allocation: the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. S9.21. The bandwidth of any individual transmission shall not exceed ± 25 kHz.

S5.219 The use of the band 148-149.9 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the band 148-149.9 MHz.

S5.220 The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz. (WRC-97)

S5.222 Emissions of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz may also be used by receiving earth stations of the space research service.

S5.223 Recognizing that the use of the band 149.9-150.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorize such use in application of No. S4.4.

S5.224A The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to the land mobile-satellite service (Earth-to-space) until 1 January 2015. (WRC-97)

S5.224B The allocation of the bands 149.9-150.05 MHz and 399.9-400.05 MHz to the radionavigation-satellite service shall be effective until 1 January 2015. (WRC-97)

S5.226 The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency are contained in Article S31 and Appendix S13.

In the bands 156-156.7625 MHz, 156.8375-157.45 MHz, 160.6-160.975 MHz and 161.475- 162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles S31 and S52, and Appendix S13).

Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radio-communication service.

However, the frequency 156.8 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements.

S5.227 In the maritime mobile VHF service the frequency 156.525 MHz is to be used exclusively for digital selective calling for distress, safety and calling. The conditions for the use of this frequency are prescribed in Articles S31 and S52, and Appendices S13 and S18.

S5.254 The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. S9.21, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations.

S5.255 The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. S9.11A.

S5.256 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes (see Appendix S13).

S5.257 The band 267-272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. S9.21.

S5.260 Recognizing that the use of the band 399.9-400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. S4.4.

S5.261 Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

S5.262 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, Colombia, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Estonia, Georgia, Hungary, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakstan, Kuwait, Liberia, Malaysia, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, Russian Federation, Singapore, Somalia, Sri Lanka, Tajikistan, Turkmenistan, Ukraine and Yugoslavia, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.263 The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

S5.264 The use of the band 400.15-401 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. The power flux-density limit indicated in Annex 1 of Appendix S5 shall apply until such time as a competent world radiocommunication conference revises it.

S5.266 The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article S31 and Appendix S13).

S5.267 Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.

S5.268 Use of the band 410-420 MHz by the space research service is limited to communications within 5km of an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from extra-vehicular activities shall not exceed -153 dB(W/m2) for 0° <= Ø <= 5°, -153 + 0.077 (Ø - 5) dB(W/m2) for 5° <= Ø <= 70° and -148 dB(W/m2) for 70° <= Ø <= 90°, where Ø is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No.S4.10 does not apply to extra-vehicular activities. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. (WRC-97)

S5.282 In the bands 435-438 MHz, 1260-1270 MHz, 2400-2450 MHz, 3400-3410 MHz (in Regions 2 and 3 only) and 5650-5670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. S5.43). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. S25.11. The use of the bands 1260- 1270 MHz and 5650-5670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.

S5.286 The band 449.75-450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. S9.21.

S5.286A The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. S9.11A. (WRC-97)

S5.287 In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board communication stations. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced for on-board communications. The use of these

frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174 (see Resolution 341 (WRC-97)). (WRC-97)

S5.289 Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460-470 MHz and 1690-1710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.

S5.311 Within the frequency band 620-790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service subject to agreement between the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions 33 (Rev. WRC-97) and 507). Such stations shall not produce a power flux-density in excess of the value -129 dB(W/m2) for angles of arrival less than 20° (see Recommendation 705) within the territories of other countries without the consent of the administrations of those countries.

S5.320 Additional allocation: in Region 3, the bands 806-890 MHz and 942-960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. S9.21. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.

S5.328 The band 960-1215 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.

S5.329 Use of the radionavigation-satellite service in the band 1215-1260 MHz shall be subject to the condition that no harmful interference is caused to the radionavigation service authorized under No. S5.331.

S5.332 In the band 1215-1300 MHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis. (WRC-97)

S5.337 The use of the bands 1300-1350 MHz, 2700-2900 MHz and 9000-9200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.

S5.339 The bands 1370-1400 MHz, 2640-2655 MHz, 4950-4990 MHz and 15.20-15.35 GHz are also allocated to the space research (passive) and earth exploration-satellite (passive) services on a secondary basis.

S5.340 All emissions are prohibited in the following bands:

1400-1427 MHz,

2690-2700 MHz, except those provided for by Nos. S5.421 and S5.422,

10.68-10.7 GHz, except those provided for by No. S5.483,

15.35-15.4 GHz, except those provided for by No. S5.511,

23.6-24 GHz,.

31.3-31.5 GHz,

31.5-31.8 GHz, in Region 2,

48.94-49.04 GHz, from airborne stations,

50.2-50.4 GHz , except those provided for by No. S5.555A,

52.6-54.25 GHz,

86-92 GHz,

105-116 GHz,

140.69-140.98 GHz, from airborne stations and from space stations in the space-to-Earth direction,

182-185 GHz, except those provided for by No. S5.563,

217-231 GHz. (WRC-97)

S5.341 In the bands 1400-1727 MHz, 101-120 GHz and 197-220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.

S5.345 Use of the band 1452-1492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution 528 (WARC-92).

S5.347 Different category of service: in Bangladesh, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cuba, Denmark, Egypt, Greece, Ireland, Italy, Jordan, Kenya, Mozambique, Portugal, Sri Lanka, Swaziland, Yemen, Yugoslavia and Zimbabwe, the allocation of the band 1452-1492 MHz to the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007. (WRC-97)

S5.348A In the band 1492-1525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. S.9.11A for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be -150 dB(W/m2) in any 4 kHz band for all angles of arrival, instead of those given in Table S5-2 of Appendix S5. The above threshold level of the power flux-density shall apply until it is changed by a competent world radiocommunication conference.

S5.351 The bands 1525-1544 MHz, 1545-1559 MHz, 1626.5-1645.5 MHz and 1646.5-1660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

S5.353A In applying the procedures of No. S9.11A to the mobile-satellite service in the bands 1530-1544 MHz and 1626.5-1645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (See Resolution 218 (WRC-97).) (WRC-97)

S5.354 The use of the bands 1525-1559 MHz and 1626.5-1660.5 MHz by the mobile-satellite services is subject to coordination under No. S9.11A.

S5.356 The use of the band 1544-1545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article S31).

S5.357 Transmissions in the band 1545-1555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.

S5.357A In applying the procedures of No. S9.11A to the mobile-satellite service in the bands 1545- 1555 MHz and 1646.5-1656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article S44. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article S44 shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article S44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (See Resolution 218 (WRC-97).) (WRC-97)

S5.359 Additional allocation: in Germany, Saudi Arabia, Armenia, Austria, Azerbaijan, Belarus, Benin, Bulgaria, Cameroon, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Jordan, Kazakstan, Kuwait, Latvia, Libya, Mali, Mauritania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Syria, Kyrgyzstan, the Democratic People's Republic of Korea, Romania, Russian Federation, Senegal, Swaziland, Tajikistan, Tanzania, Turkmenistan, Ukraine, Zambia and Zimbabwe the bands 1550-1645.5 MHz and 1646.5-1660 MHz are also allocated to the fixed service on a primary basis. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in the bands 1550-1555 MHz, 1610-1645.5 MHz and 1646.5-1660 MHz.

S5.364 The use of the band 1610-1626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. S9.11A. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of -15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. S5.366 (to which No. S4.10 applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed -3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. S5.366 and stations in the

fixed service operating in accordance with the provisions of No. S5.359. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. S5.366.

S5.365 The use of the band 1613.8-1626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. S9.11A.

S5.366 The band 1610-1626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. S9.21.

S5.367 Additional allocation: The bands 1610-1626.5 MHz and 5000-5150 MHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. S9.21.

S5.368 With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. S4.10 do not apply in the band 1610-1626.5 MHz, with the exception of the aeronautical radionavigation-satellite service.

S5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the band 1610.6-1613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. S29.13 applies).

S5.374 Mobile earth stations in the mobile-satellite service operating in the bands 1631.5-1634.5 MHz and 1656.5-1660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. S5.359. (WRC-97)

S5.375 The use of the band 1645.5-1646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article S31).

S5.376 Transmissions in the band 1646.5-1656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

S5.376A Mobile earth stations operating in the band 1660-1660.5 MHz shall not cause harmful interference to stations in the radio astronomy service. (WRC-97)

S5.379A Administrations are urged to give all practicable protection in the band 1660.5-1668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1664.4-1668.4 MHz as soon as practicable.

S5.380 The bands 1670-1675 MHz and 1800-1805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1670-1675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1800-1805 MHz is limited to transmissions from aircraft stations.

S5.385 Additional allocation: the bands 1718.8-1722.2 MHz, 150-151 GHz, 174.42-175.02 GHz, 177- 177.4 GHz, 178.2-178.6 GHz, 181-181.46 GHz, 186.2-186.6 GHz and 257.5-258 GHz are also allocated to the radio astronomy service on a secondary basis for spectral line observations.

S5.388 The bands 1885-2025 MHz and 2110-2200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000). Such use does not preclude the use of these bands by other services to which they are allocated. The bands should be made available for IMT-2000 in accordance with Resolution 212 (Rev.WRC-97). (WRC-97)

S5.389A The use of the bands 1980-2010 MHz and 2170-2200 MHz by the mobile-satellite service is subject to coordination under No. S9.11A and to the provisions of Resolution 716 (WRC-95). The use of these bands shall not commence before 1 January 2000; however the use of the band 1980-1990 MHz in Region 2 shall not commence before 1 January 2005.

S5.391 In making assignments to the mobile service in the bands 2025-2110 MHz and 2200-2290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154, and shall take that Recommendation into account for the introduction of any other type of mobile system. (WRC-97)

S5.392 Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2025-2110 MHz and 2200-2290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.

S5.396 Space stations of the broadcasting-satellite service in the band 2310-2360 MHz operating in accordance with No. S5.393 that may affect the services to which this band is allocated in other countries shall be coordinated

and notified in accordance with Resolution 33 (Rev.WRC-97). Complementary terrestrial broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use.

S5.398 In respect of the radiodetermination-satellite service in the band 2483.5-2500 MHz, the provisions of No. S4.10 do not apply.

S5.402 The use of the band 2483.5-2500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. S9.11A. Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2483.5-2500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4990-5000 MHz band allocated to the radio astronomy service worldwide.

S5.403 Subject to agreement obtained under No. S9.21, the band 2520-2535 MHz (until 1 January 2005 the band 2500-2535 MHz) may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. S9.11A apply.

S5.409 Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in the band 2500-2690 MHz.

S5.411 When planning new tropospheric scatter radio-relay links in the band 2500-2690 MHz, all possible measures shall be taken to avoid directing the antennae of these links towards the geostationary-satellite orbit.

S5.413 In the design of systems in the broadcasting-satellite service in the bands between 2500 MHz and 2690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2690-2700 MHz.

S5.414 The allocation of the frequency band 2500-2520 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2005 and is subject to coordination under No. S9.11A.

S5.415 The use of the bands 2500-2690 MHz in Region 2 and 2500-2535 MHz and 2655-2690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. S9.21, giving particular attention to the broadcasting-satellite service in Region 1. In the direction space-to- Earth, the power flux-density at the Earth's surface shall not exceed the values given in Article S21, Table S21-4.

S5.416 The use of the band 2520-2670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception, subject to agreement obtained under No. S9.21. The power flux-density at the Earth's surface shall not exceed the values given in Article S21, Table S21-4.

S5.419 The allocation of the frequency band 2670-2690 MHz to the mobile-satellite service shall be effective from 1 January 2005. When introducing systems of the mobile-satellite service in this band, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. S9.11A.

S5.420 The band 2655-2670 MHz (until 1 January 2005 the band 2655-2690 MHz) may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. S9.21. The coordination under No. S9.11A applies.

S5.423 In the band 2700-2900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.

S5.425 In the band 2900-3100 MHz, the use of the shipborne interrogator-transponder system (SIT) shall be confined to the sub-band 2930 -2950 MHz.

S5.426 The use of the band 2900-3100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

S5.427 In the bands 2900-3100 MHz and 9300-9500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. S4.9.

S5.433 In Regions 2 and 3, in the band 3400-3600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985. Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.

S5.438 Use of the band 4200-4400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. However, passive sensing in the earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).

S5.439 Additional allocation: in China, the Islamic Republic of Iran and Libya, the band 4200-4400 MHz is also allocated to the fixed service on a secondary basis. (WRC-97)

S5.440 The standard frequency and time signal-satellite service may be authorized to use the frequency 4202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of ± 2 MHz of these frequencies, subject to agreement obtained under No. S9.21.

S5.441 The use of the bands 4500-4800 MHz (space-to-Earth), 6725-7025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix S30B. The use of the bands 10.7- 10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix S30B. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by non-geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Resolution 130 (WRC-97). (WRC-97)

S5.442 In the bands 4825-4835 MHz and 4950-4990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service.

S5.444 The band 5000-5150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. The requirements of this system shall take precedence over other uses of this band. For the use of this band, No. S5.444A and Resolution 114 (WRC-95) apply.

S5.444A Additional allocation: the band 5091-5150 MHz is also allocated to the fixed-satellite service (Earth-to-space) on a primary basis. This allocation is limited to feeder links of non-geostationary mobile-satellite systems and is subject to coordination under No. S9.11A. In the band 5091-5150 MHz, the following conditions also apply:

- prior to 1 January 2010, the use of the band 5091-5150 MHz by feeder links of non-geostationary- satellite systems in the mobile-satellite service shall be made in accordance with Resolution 114 (WRC-95);

- prior to 1 January 2010, the requirements of existing and planned international standard systems for the aeronautical radionavigation service which cannot be met in the 5000-5091 MHz band, shall take precedence over other uses of this band;

- after 1 January 2008, no new assignments shall be made to stations providing feeder links of non-geostationary mobile-satellite systems;

- after 1 January 2010, the fixed-satellite service will become secondary to the aeronautical radionavigation service.

S5.446 Additional allocation: in the countries listed in Nos. S5.369 and S5.400, the band 5150-5216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. S9.21. In Region 2, the band is also allocated to the radiodetermination-satellite service (space-to- Earth) on a primary basis. In Regions 1 and 3, except those countries listed in Nos. S5.369 and S5.400, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodetermination-satellite service operating in the bands 1610-1626.5 MHz and/or 2483.5-2500 MHz. The total power flux-density at the Earth's surface shall in no case exceed -159 dBW/m2 in any 4 kHz band for all angles of arrival.

S5.447A The allocation to the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary- satellite systems in the mobile-satellite service and is subject to coordination under No. S9.11A.

S5.447B Additional allocation: the band 5150-5216 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. S9.11A. The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5150-5216 MHz shall in no case exceed -164 dB(W/m2) in any 4 kHz band for all angles of arrival.

S5.447C Administrations responsible for fixed-satellite service networks in the band 5150-5250 MHz operated under Nos. S5.447A and S5.447B shall coordinate on an equal basis in accordance with No. S9.11A with administrations responsible for non-geostationary-satellite networks operated under No. S5.446 and brought into. use prior to 17 November 1995. Satellite networks operated under No. S5.446 brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. S5.447A and S5.447B.

S5.447D The allocation of the band 5250-5255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)

S5.448A The use of the frequency band 5250-5350 MHz by the earth exploration-satellite (active) and space research (active) services shall not constrain the future development and deployment of the radiolocation service. (WRC-97)

S5.448B The earth exploration-satellite (active) service operating in the band 5350-5460 MHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)

S5.449 The use of the band 5350-5470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

S5.452 Between 5600 MHz and 5650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.

S5.458 In the band 6425-7075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7075-7250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6425-7025 MHz and 7075-7250 MHz.

S5.458A In making assignments in the band 6700-7075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6650-6675.2 MHz from harmful interference from unwanted emissions.

S5.458B The space-to-Earth allocation to the fixed-satellite service in the band 6700-7075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. S9.11A. The use of the band 6700-7075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. S22.2.

S5.458C Administrations making submissions in the band 7025-7075 MHz (Earth-to-space) for geostationary-satellite systems in the fixed-satellite service after 17 November 1995 shall consult on the basis of relevant ITU-R Recommendations with the administrations that have notified and brought into use non-geostationary-satellite systems in this frequency band before 18 November 1995 upon request of the latter administrations. This consultation shall be with a view to facilitating shared operation of both geostationary-satellite systems in the fixed-satellite service and non-geostationary-satellite systems in this band.

S5.460 Additional allocation: the band 7145-7235 MHz is also allocated to the space research (Earth-to-space) service on a primary basis, subject to agreement obtained under No. S9.21. The use of the band 7145-7190 MHz is restricted to deep space; no emissions to deep space shall be effected in the band 7190-7235 MHz.

S5.461 Additional allocation: the bands 7250-7375 MHz (space-to-Earth) and 7900-8025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. S9.21.

S5.461A The use of the band 7450-7550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime. (WRC-97)

S5.461B The use of the band 7750-7850 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems. (WRC-97)

S5.462A In Regions 1 and 3 (except for Japan), in the band 8025-8400 MHz, the earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following provisional values for angles of arrival (Ø), without the consent of the affected administration:

-174 dB(W/m2) in a 4 kHz band for 0° <= Ø < 5°

-174 + 0.5 (Ø - 5) dB(W/m2) in a 4 kHz band for 5° <= Ø < 25°

-164 dB(W/m2) in a 4 kHz band for 25° <= Ø <= 90°

S5.463 Aircraft stations are not permitted to transmit in the band 8025-8400 MHz. (WRC-97)

S5.465 In the space research service, the use of the band 8400-8450 MHz is limited to deep space.

S5.469A In the band 8550-8650 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service. (WRC-97)

S5.470 The use of the band 8750-8850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8800 MHz.

S5.472 In the bands 8850-9000 MHz and 9200-9225 MHz, the maritime radionavigation service is limited to shore-based radars.

S5.474 In the band 9200-9500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article S31).

S5.475 The use of the band 9300-9500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9300-9320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. In the band 9300-9500 MHz, ground-based radars used for meteorological purposes have priority over other radiolocation devices.

S5.476 In the band 9300-9320 MHz in the radionavigation service, the use of shipborne radars, other than those existing on 1 January 1976, is not permitted until 1 January 2001.

S5.476A In the band 9500-9800 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radionavigation and radiolocation services. (WRC-97)

S5.479 The band 9975-10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.

S5.482 In the band 10.6-10.68 GHz, stations of the fixed and mobile, except aeronautical mobile, services shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed -3 dBW. These limits may be exceeded subject to agreement obtained under No. S9.21. However, in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, China, the United Arab Emirates, Georgia, India, Indonesia, the Islamic Republic of Iran, Iraq, Japan, Kazakstan, Kuwait, Latvia, Lebanon, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable.

S5.484A The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by non-geostationary- and geostationary-satellite systems in the fixed-satellite service is subject to the provisions of Resolution 130 (WRC-97). The use of the band 17.8-18.1 GHz (space-to-Earth) by non-geostationary fixed-satellite service systems is also subject to the provisions of Resolution 538 (WRC-97). (WRC-97)

S5.487 In the band 11.7-12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the provisions of Appendix S30.

S5.491 Additional allocation: in Region 3, the band 12.2-12.5 GHz is also allocated to the fixed-satellite (space-to-Earth) service on a primary basis, limited to national and sub-regional systems. The power flux-density limits in Article S21, Table S21-4 shall apply to this frequency band. The introduction of the service in relation to the broadcasting-satellite service in Region 1 shall follow the procedures specified in Article 7 of Appendix S30, with the applicable frequency band extended to cover 12.2-12.5 GHz.

S5.492 Assignments to stations of the broadcasting-satellite service in conformity with the appropriate regional Plan in Appendix S30 may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference or require more protection from interference than the broadcasting-satellite service transmissions operating in conformity with this Plan. With respect to the space services, this band shall be used principally for the broadcasting-satellite service. (WRC-97)

S5.493 The broadcasting-satellite service in the band 12.5-12.75 GHz in Region 3 is limited to a power flux-density not exceeding -111 dB(W/m2)/27 MHz for all conditions and for all methods of modulation at the edge of the service area. (WRC-97)

S5.497 The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.

S5.498A The Earth exploration-satellite (active) and space research (active) services operating in the band 13.25-13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)

S5.501A The allocation of the band 13.4-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)

S5.501B In the band 13.4-13.75 GHz, the Earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service. (WRC-97)

S5.502 In the band 13.75-14 GHz, the e.i.r.p. of any emission from an earth station in the fixed-satellite service shall be at least 68 dBW, and should not exceed 85 dBW, with a minimum antenna diameter of 4.5m. In addition the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation servicestowards the geostationary-satellite orbit shall not exceed 59 dBW.

S5.503 In the band 13.75-14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. The e.i.r.p. density of emissions from any earth station in the fixed-satellite service shall not exceed 71 dBW in any 6 MHz band in the frequency range 13.772-13.778 GHz until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band. Automatic power control may be used to increase the e.i.r.p. density above 71 dBW in any 6 MHz band in this frequency range to compensate for rain attenuation, to the extent that the power-flux density at the fixed-satellite service space station does not exceed the value resulting from use of an e.i.r.p. of 71 dBW in any 6 MHz band in clear sky conditions.

S5.503A Until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research and Earth exploration-satellite services. After that date, these non-geostationary space stations will operate on a secondary basis in relation to the fixed-satellite service. Additionally, when planning earth stations in the fixed-satellite service to be brought into service between 1 January 2000 and 1 January 2001, in order to accommodate the needs of spaceborne precipitation radars operating in the band 13.793-13.805 GHz, advantage should be taken of the consultation process and the information given in Recommendation ITU-R SA.1071.

S5.504 The use of the band 14-14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service.

S5.506 The band 14-14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.

S5.510 The use of the band 14.5-14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe.

S5.511A Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth (see Resolution 123 (WRC-97)) and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. S9.11A. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU-R S.1341. Also in the space-to-Earth direction, harmful interference shall not be caused to stations of the radio astronomy service using the band 15.35-15.4 GHz. The threshold levels of interference and associated power flux-density limits which are detrimental to the radio astronomy service are given in Recommendation ITU-R RA.769-1. Special measures will need to be employed to protect the radio astronomy service in the band 15.35-15.4 GHz. (WRC-97)

S5.511C Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R S.1340. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. S4.10 applies) from harmful interference from feeder-link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder-link earth station shall be in accordance with Recommendation ITU-R S.1340. (WRC-97)

S5.511D Fixed-satellite service systems for which complete information for advance publication has been received by the Bureau by 21 November 1997 may operate in the bands 15.4-15.43 GHz and 15.63-15.7 GHz in the space-to-Earth direction and 15.63-15.65 GHz in the Earth-to-space direction. In the bands 15.4-15.43 GHz and 15.65-15.7 GHz, emissions from a non-geostationary space station shall not exceed the power flux-density limits at the Earth's surface of -146 dB(W/m2/ MHz) for any angle of arrival. In the band 15.63-15.65 GHz, where an administration plans emissions from a non-geostationary space station that exceed -146 dB(W/m2/ MHz) for any angle of arrival, it shall coordinate under No. S9.11A with the affected administrations. Stations in the fixed-satellite service operating in the band 15.63-15.65 GHz in the Earth-to-space direction shall not cause harmful interference to stations in the aeronautical radionavigation service (No. S4.10 applies). (WRC-97)

S5.513 Additional allocation: in Israel, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. These services shall not claim protection from or cause harmful interference to services operating in accordance with the Table in countries other than those included in No. S5.512.

S5.513A Spaceborne active sensors operating in the band 17.2-17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis. (WRC-97)

S5.516 The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. For the use of the band 17.3- 17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article S11. The use of the bands 17.3-18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to the provisions of Resolution 538 (WRC-97). (WRC-97)

S5.519 Additional allocation: the band 18.1-18.3 GHz is also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Its use is limited to geostationary satellites and shall be in accordance with the provisions of Article S21, Table S21-4.

S5.520 The use of the band 18.1-18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

S5.523 In assigning frequencies to stations in the fixed-satellite service in the direction space-to-Earth, administrations are requested to limit as far as practicable the power flux-density at the Earth's surface in the band 18.6-18.8 GHz, in order to reduce the risk of interference to passive sensors in the earth exploration-satellite and space research services.

S5.523A The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. S9.11A and No. S22.2 does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. S9.11A with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix S4 notification information is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

S5.523B The use of the band 19.3-19.6 GHz (Earth-to-space) by the fixed-satellite service is limited to feeder links for non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. S9.11A, and No. S22.2 does not apply.

S5.523C No. S22.2 of the Radio Regulations shall continue to apply in the bands 19.3-19.6 GHz and 29.1- 29.4 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix S4 coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

S5.523D The use of the band 19.3-19.7 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by feeder links for non-geostationary-satellite systems in the mobile-satellite service is subject to the application of the provisions of No. S9.11A, but not subject to the provisions of No. S22.2. The use of this band for other non-geostationary fixed-satellite service systems, or for the cases indicated in Nos. S5.523C and S5.523E, is not subject to the provisions of No. S9.11A and shall continue to be subject to Articles S9 (except No. S9.11A) and S11 procedures, and to the provisions of No. S22.2. (WRC-97)

S5.523E No. S22.2 of the Radio Regulations shall continue to apply in the bands 19.6-19.7 GHz and 29.4-29.5 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix S4 coordination information, or notification information, is considered as having been received by the Bureau by 21 November 1997. (WRC-97)

S5.525 In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz.

S5.526 In the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2, and in the bands 20.1-20.2 GHz and 29.9- 30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

S5.527 In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No. S4.10 do not apply with respect to the mobile-satellite service.

S5.528 The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. S5.524.

S5.530 In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4-22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution 525 (WARC-92).

S5.532 The use of the band 22.21-22.5 GHz by the Earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.

S5.533 The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.

S5.535 In the band 24.75-25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

S5.536 Use of the 25.25-27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.

S5.536A Administrations installing earth exploration-satellite earth stations cannot claim protection from fixed and mobile stations operated by neighbouring administrations. In addition, earth stations operating in the earth exploration-satellite service should take into account Recommendation ITU-R SA.1278. (WRC-97)

S5.537 Space services using non-geostationary satellites operating in the inter-satellite service in the band 27-27.5 GHz are exempt from the provisions of No. S22.2.

S5.538 Additional allocation: the bands 27.500-27.501 GHz and 29.999-30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. In the band 27.500-27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in Article S21, Table S21-4 on the Earth's surface.

S5.539 The band 27.5-30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

S5.540 Additional allocation: the band 27.501-29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

S5.541 In the band 28.5-30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

S5.543 The band 29.95-30 GHz may be used for space-to-space links in the Earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.

S5.544 In the band 31-31.3 GHz the power flux-density limits specified in Article S21, Table S21-4 shall apply to the space research service.

S5.547 The bands 31.8-33.4 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolution 726 (WRC-97)). (WRC-97)

S5.547A Use of the band 31.8-33.4 GHz by the fixed service shall be in accordance with Resolution 126 (WRC-97). (WRC-97)

S5.548 In designing systems for the inter-satellite and radionavigation services in the band 32-33 GHz, and for the space research service (deep space) in the band 31.8-32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation 707).

S5.551A In the band 35.5-36.0 GHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the meteorological aids service and other services allocated on a primary basis. (WRC-97)

S5.551B The use of the band 41.5-42.5 GHz by the fixed-satellite service (space-to-Earth) is subject to Resolution 128 (WRC-97). (WRC-97)

S5.551E Use of the band 40.5-42.5 GHz by the fixed-satellite service shall be in accordance with Resolution 134 (WRC-97). (WRC-97)

S5.552 The allocation of the spectrum for the fixed-satellite service in the bands 42.5-43.5 GHz and 47.2- 50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5-39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2-49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5-42.5 GHz.

S5.552A The allocation to the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz is subject to the provisions of Resolution 122 (WRC-97). (WRC-97)

S5.553 In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 134-142 GHz, 190-200 GHz and 252-265 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. S5.43).

S5.554 In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 134-142 GHz, 190-200 GHz and 252-265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service.

S5.555 Additional allocation: the bands 48.94-49.04 GHz, 97.88-98.08 GHz, 140.69-140.98 GHz, 144.68-144.98 GHz, 145.45-145.75 GHz, 146.82-147.12 GHz, 250-251 GHz and 262.24-262.76 GHz are also allocated to the radio astronomy service on a primary basis.

S5.555A The band 50.2-50.4 GHz is also allocated, on a primary basis, to the fixed and mobile services until 1 July 2000. (WRC-97)

S5.556 In the bands 51.4-54.25 GHz, 58.2-59 GHz, 64-65 GHz, 72.77-72.91 GHz and 93.07-93.27 GHz, radio astronomy observations may be carried out under national arrangements.

S5.556A Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0km to 1000km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed -147 dB(W/m2/100 MHz) for all angles of arrival. (WRC-97)

S5.558 In the bands 55.78-58.2 GHz, 59-64 GHz, 66-71 GHz, 116-134 GHz, 170-182 GHz and 185-190 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. S5.43). (WRC-97)

S5.558A Use of the band 56.9-57 GHz by inter-satellite systems is limited to links between satellites in geostationary-satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0km to 1000km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed -147 dB(W/m2/100 MHz) for all angles of arrival. (WRC-97)

S5.559 In the bands 59-64 GHz and 126-134 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No.S5.43).

S5.560 In the band 78-79 GHz radars located on space stations may be operated on a primary basis in the Earth exploration-satellite service and in the space research service.

S5.561 In the band 84-86 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service.

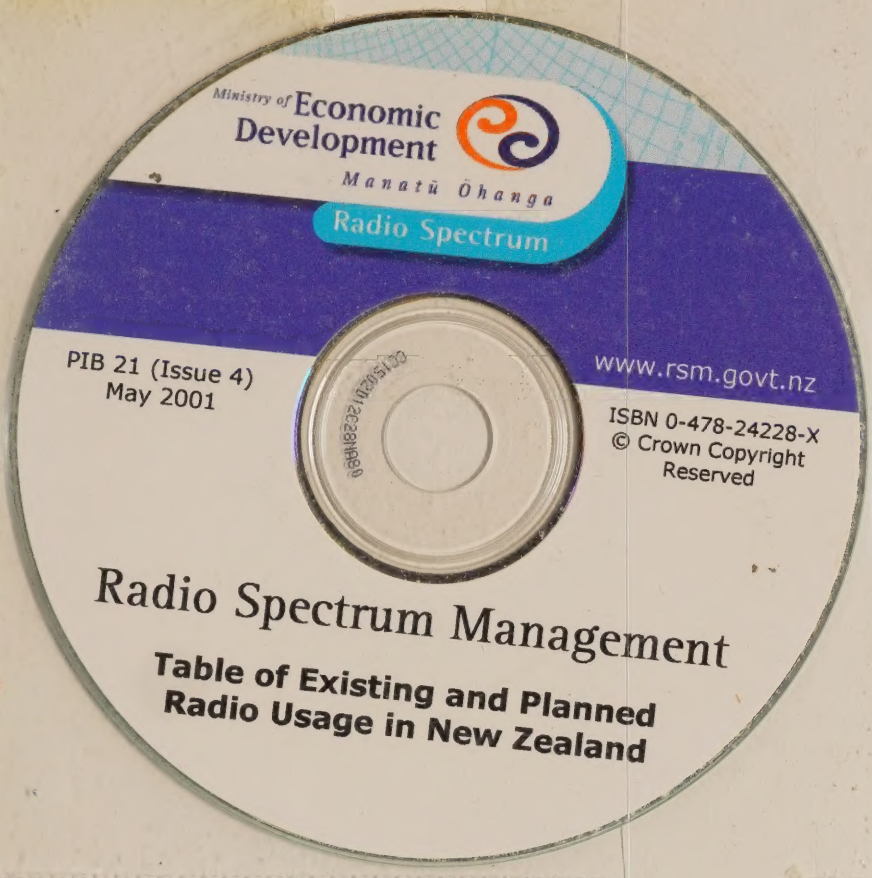
S5.562 The use of the band 94-94.1 GHz by the Earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars. (WRC-97)

S5.565 The frequency band 275-400 GHz may be used by administrations for experimentation with, and development of, various active and passive services. In this band a need has been identified for the following spectral line measurements for passive services:

- radio astronomy service: 278-280 GHz and 343-348 GHz;

- Earth exploration-satellite service (passive) and space research service (passive): 275-277 GHz, 300-302 GHz, 324-326 GHz, 345-347 GHz, 363-365 GHz and 379-381 GHz.

Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services. Administrations are urged to take all practicable steps to protect these passive services from harmful interference until the next competent world radiocommunication conference.



Patent Pending

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